

**LOCOMOTIVES
FOR
GHANA**

See Advert. Page 12



"THE TIMES" OF THE TRANSPORT WORLD

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LONDON, MAY 31, 1958

**TRANSPORT
IN
IRELAND**

See Pages 2, 7 and 13

PRICE NINEPENCE

B.T.C. Chairmanship

SIR BRIAN ROBERTSON'S five years' tenure of the chairmanship of the B.T.C. has been a difficult one, but few will question his achievements. It is therefore gratifying that the Minister of Transport should have renewed his appointment for a further term of five years from September, 1958. Succeeding Lord Hurcomb at a moment when the most obtuse of politicians were beginning to realise the worth and possibilities of the Commission and when the political climate was veering in its favour, Sir Brian dusted and amplified the Commission's railway modernisation plan and with the help of a sympathetic Minister of Transport secured for it Cabinet approval. His efforts were largely directed at reviving the railways by regaining public esteem and restoring goodwill and esprit de corps amongst the staff of all ranks. He has never missed an opportunity of extolling in public the virtues of railwaymen and dealing reasonably—at one time, it was suggested, too open-handedly—with their wages demands. It is mainly because he is trusted and liked by the union leaders that settlement was reached in the recent negotiations. And even though one accepts the principles of the agreement but is not wholly optimistic as to the measures to secure the requisite economies, one will not question the spirit underlying it. The hard fact is that without the goodwill and co-operation of all grades of the staff the modernisation plan cannot succeed. No one could have striven more to secure that goodwill than has the chairman of the British Transport Commission. We wish him further success.

Economies on the Railways

WHAT is to be the nature of the railway economies? Some information on the subject came from the Minister of Transport when replying to questions from Messrs. Geoffrey Wilson and George Strauss in the House of Commons on May 21. Mr. Watkinson said that the general steps the Commission was taking were set out in the chairman's letter of May 2; these were summarised in our May 10 issue. The measures were put in hand on May 1 and had since been intensified; they would result in heavy cuts in services and thus reductions in manpower. Obsolete wagons were now being withdrawn from service at a rate of 3,000 a week. Were the railway services being severely damaged by the cuts? asked Mr. Strauss. Mr. Watkinson did not think so and, he said, neither did the Commission. It was part of the policy to try to streamline the railway service to fit the second half of the twentieth century, and not the nineteenth century. Out of these comments a further question arises: so much depends upon the speedy closing of unremunerative lines and services that means must be found to expedite and simplify the labours of the consultative committees or to make the Commission complete master of its own undertaking; what steps has the Minister taken to this end?

The Screw on the Public

WITH the London bus strike entering its fourth week Mr. Frank Cousins, not content with trying to hold up extra fuel for motor coaches, appeals to the two railway unions, the N.U.R. and A.S.L.E.F., to consider whether the "continued excessive use of the Underground by passengers who would normally have been using the bus services is minimising the consequences of the dispute as far as the employers are concerned." This, stated his union's negotiating committee, was "making it more difficult for us to reach satisfactory understanding with the London Transport Executive." In other words, those members of the public who at much inconvenience strive to get to work or go about their other lawful occasions should be further penalised to help Mr. Cousins to escape from an increasing dilemma. It is not as if extra trains were being run to cope with the additional traffic: the suggestion behind the appeal is that the normal service should be deranged by

CURRENT TOPICS

go-slow or other tactics and the patient passengers further victimised. There is also the threat of further disruption of petrol and oil distribution in the Home Counties. Things must have reached a pretty pass when the T.G.W.U. is ready to extort this further sacrifice of public goodwill. As we pointed out recently, a major result of the railway wages negotiations must have been recognition by the union leaders that the level of wages on the railways was inescapably linked with efficiency and profitability. Losses in one division of the B.T.C. inevitably affect the whole, and the longer the bus strike lasts the greater the loss to the Commission and the more distant the

the horse as a means of propulsion. His Excellency Mr. G. A. Vahid, Minister Plenipotentiary of Iran, acting as Ambassador, graciously replied. A description of these interesting vehicles will appear later.

A New Canal Cut

SUBSIDENCE through brine pumping on the Cheshire salt field has compelled the British Transport Commission to replace Thurlwood Lock on the Trent and Mersey Canal and to make a 1,750-ft. diversion between that point and Marston to avoid subsidence around mine shafts—the first new section of canal to be cut in this country

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recovery of its deficit. This fact cannot have escaped the attention of those to whom the appeal is addressed and who, incidentally, have gained results by the exercise of patience and understanding.

Buses for Teheran

ON May 27 Lord Brabazon of Tara, chairman of Associated Commercial Vehicles, officially handed over to Mr. Esmail Rahimi Larjani, a director of the Teheran Omnibus Board, the first consignment of A.E.C. Regent Mk.V double-deck vehicles with 73-seat Park Royal bodies ordered by that undertaking. The order, for 250 complete double-deck buses, was placed last September in the face of intense international competition and is the largest order ever received from overseas by any British commercial vehicle manufacturer for complete double-deck vehicles and spares and represents a value of approximately £2½ million. As speed is the essence of this contract, a most important factor lies in adhering faithfully to the delivery dates promised. A prime condition of this order was the shipping before the end of May of the first 40 complete buses—and this has now been accomplished. The delivery of the whole order for 250 buses will be completed by April, 1959.

With a number of resemblances to London buses—the passage of one through the streets to a West End luncheon caused some envious stares—the vehicles include many special features to meet the climatic and operational conditions. Among them are a heavy-duty frame, a diesel engine of 11.3 litre capacity for the altitude and gradients of Teheran and Monocontrol transmission for ease of operation. Special body features include insulation against direct heat, maximum ventilation and a heavy duty body framework. At a luncheon to mark the occasion Lord Brabazon referred to the many links between Britain and Iran and to the world's indebtedness to Iran, the ancient Persia, as the cradle of civilisation and, in particular from the transport viewpoint, for having introduced

for over half a century. Bringing the threat to the canal under control has cost about £90,000. The lock at Thurlwood is a pre-fabricated steel tank unit designed to be self-supporting in the event of differential settlement and capable of being jacked level. On May 19 the new lock was formally brought into service by Sir Reginald Kerr, general manager, British Waterways, entering it at the wheel of *Kingfisher*. Lord Rusholme, chairman of the Waterways Sub-Commission of the British Transport Commission, worked the lock gates. Subsequently he cut a tape from the bows of *Waterwitch* to open the new cut. Both vessels went down the Anderton lift to the Weaver Navigation. Sir Reginald Kerr then proceeded with Lady Kerr on his tour of inspection of the system, while guests of British Waterways were entertained at a luncheon presided over by Mr. C. M. Marsh, divisional manager, British Waterways. The new works, which we shall illustrate and describe in detail later, were the brainchild of Mr. A. Muir-White, former divisional engineer, and have been completed under his successor, Mr. E. W. Radcliffe.

Photography in the Motor Industry

NOW open between 9 a.m. and 5.30 p.m. on Mondays to Fridays and 9 a.m. and noon on Saturdays at the Ilford Gallery, High Holborn, London, is a unique exhibition entitled *Ford By Ilford*. It has been organised jointly by Ilford, Limited, and Ford Motor Co., Limited, and shows the vital part photography plays in the daily work of a modern motor vehicle manufacturer. Grown from an original staff of two men and a boy when it was founded just before the last war, the Ford photographic department now employs a staff of 11 and produces approximately 10,000 negatives and 120,000 to 150,000 prints a year as well as countless feet of cine film and thousands of lantern slides. Illustrating the diversity of the Ford photographer's operation, an entire section has been given over to the

department's day-to-day activity. On each of seven large-size panels is a typical daily worksheet, with each item tied to the picture or pictures which resulted from the job. The high quality of the prints and the interesting manner of their presentation makes this section alone worth a visit. In the foreground of the exhibition is a vast panorama of the Dagenham scene extending through a 270 deg. arc. This is an outstanding picture, taken from a special vantage point, which like most other photographs in the exhibition has not been seen before. Beneath this panorama is the second section. Here, the assembly lines, coke ovens, blast furnace, power station, the new foundry and other important divisions are dramatically depicted. Next is a photographic display of all current Ford productions, which includes an explanation of the many aspects of sales promotion, public relations and advertising as they affect the motor vehicle business. Undoubtedly, Ford and Ilford together (the latter in addition to loaning the Gallery, made the enlargements and designed the display) have produced a first-class show.

Outdoor Transport Advertising

SPEAKING at last week's luncheon in London at which the 1957 National Outdoor Advertising Awards, sponsored by the *World's Press News*, were presented, the Chancellor of the Duchy of Lancaster, Dr. Charles Hill, recalled that the first known instance of approach to the potential customer by way of outdoor posters dated back to the mid-eighteenth century and was launched on behalf of the British Navy in conjunction with the press gangs! He commended the high standard that had been achieved and maintained in outdoor advertising in this country. The first and second awards in the public service vehicle class went to Arthur Guinness and Co., Limited (S. H. Benson, Limited), third in this section, being Ferodo, Limited (Armstrong Warden, Limited). First in the railway and underground stations class were Idris (Greenly's, Limited) and in other sections awards were made to the S.B.A.C. Farnborough (Scott-Turner and Associates, Limited), British Overseas Airways Corporation (S. T. Garland Advertising Service, Limited), and Pan-American Airways (J. Walter Thompson and Co., Limited). Mr. W. A. Abrahams, chairman of the Council of the Solus Outdoor Advertising Association, presided at the luncheon and was supported by Mr. Basil Burton, chairman of *World's Press News*.

Sea Routes to Ireland

THINGS are said never to be what they were and contemplation of a 1910 guide to Dublin leads at first to agreement at least on the score of shipping routes to Ireland. It is quite true that the frequency on some of the services was greater than now, but many are still providing passenger facilities with modern and comfortable ships. The City of Dublin Liverpool service is now provided by the British and Irish Steam Packet Company which was then plying twice a week between Dublin and London with calls at Falmouth, Plymouth, Southampton and Portsmouth and cargoes which consisted to a considerable extent of casks of a well-known stout. Nowadays the cargo service from London is provided by Coast Lines, Limited, which controls the B. and I. Passengers are carried in summer between London and Liverpool via Dublin. Another Coast Lines associate, Burns and Laird Lines, Limited, maintains a Glasgow—Dublin service as well as its Royal Mail sailings between Glasgow and Belfast and a Glasgow—Derry service, and thus continues the 1910 tradition of its component companies. British Railways inherited and has maintained the L.M.S. Holyhead—Dun Laoghaire route and those of the G.W.R. from Fishguard to Rosslare and to Waterford, while further south the City of Cork Steam Packet Co., Limited, which is yet another Coast Lines associate, plies from the port of its title thrice-weekly to Fishguard and weekly to Liverpool.



Sing a song of sixpence—

Air-India's full of zest

Four and twenty hours a day

flying East and West

Bombay, Bangkok and Sydney,

and to Singapore—

What range! What regularity!

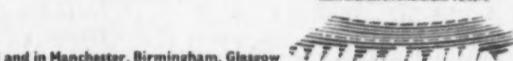
What luxury!—what more?

Daily to Bombay: Super-G Constellations with luxurious slumberettes and sleepers; onward connections throughout the Far East

AIR-INDIA

International

66 Haymarket London W1 TRAifalgar 4541 and in Manchester, Birmingham, Glasgow

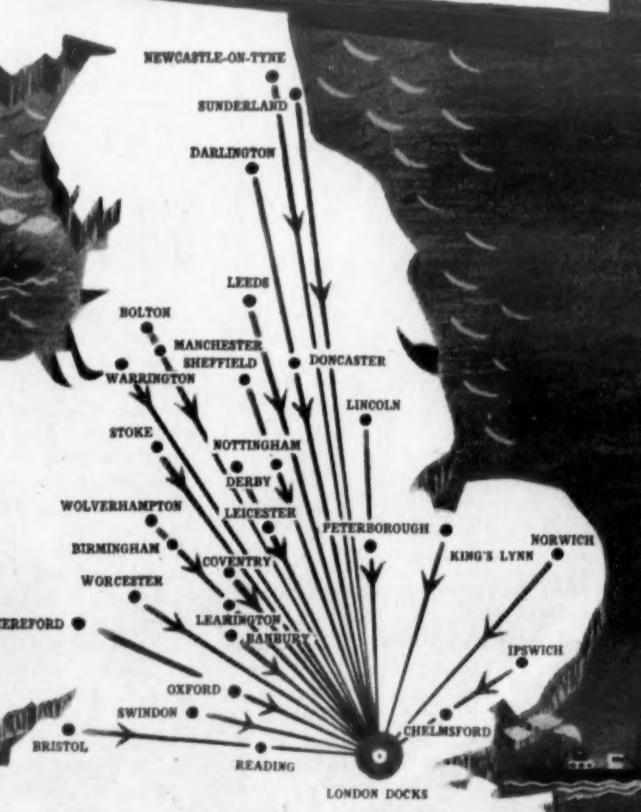


NEXT-DAY
DELIVERY BY
EXPORT EXPRESS SERVICE
TO LONDON DOCKS

This map shows some of the many towns from which British Railways Export Express Service gives next-day delivery for wagon-load traffic to London Docks (Royal, India and Millwall Groups). It is a time-table service, and charges are competitive with any other form of transport. For further information get

in touch with your local Stationmaster or Goods Agent. He'll supply you with all the details you need. There is also an Export Express Service from the West Midlands to Merseyside and Manchester.

BRITISH RAILWAYS



BRITISH RAILWAYS EXPORT EXPRESS SERVICE

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The Editor is prepared to consider contributions offered for publication in MODERN TRANSPORT, but intending contributors should first study the length and style of articles appearing in the paper and satisfy themselves that the topic with which they propose to deal is relevant to editorial requirements. In controversial subjects relating to all aspects of transport and traffic this newspaper offers a platform for independent comment and debate, its object being to encourage the provision of all forms of transport in the best interests of the community.

Not Afraid to Take its Time

In a foreword to the official tourist guide to Ireland, D. L. Kelleher says that everyone finds "the road clear in the least populated country in Europe . . . even on the main roads you will never have to live on your nerves and your brakes. Ireland is the country that is not afraid to take its time." There is a good deal of truth in those remarks, although anyone who has had to negotiate, for example, the road from Bray to Dublin on a summer Sunday evening may feel inclined to make some reservations. The statements do, however, represent some of the problems that face the transport operator in that engaging country whose capital, Dublin, was recently visited by the Institution of Locomotive Engineers and is, next week, to be the venue of the Institute of Transport congress. Naturally enough the programme for the latter covers many more aspects of transport than did the spring meeting of the former, which did, however, manage to include a visit to the turf processing activities of Bord na Mona. All in all there will be much to see and hear and, it may be said, a good deal to learn from a country with transport problems which bear some resemblance to those in Britain even if, as cannot be emphasised too often, they are not identical.

Unremunerative Railway Mileage

WITH an economy which depends largely upon agriculture and the tourist industry Ireland faced the problem of unremunerative railway mileage at an earlier stage than Great Britain, even though the growth of road transport was somewhat slower. While steps were taken to reduce the losses and some sections such as that from Galway to Clifden were abandoned entirely, progress was slow and there was a series of inquiries—three in twenty years—into the transport situation. Coras Iompair Eireann, which is responsible for the operation of all the railways wholly within Eire, has been well aware of the need to make vigorous efforts if the railway portion of its undertaking is to survive and has carried out a programme of conversion to diesel traction as a result of which practically all its passenger services and much of its freight train mileage is now diesel operated. The results of this policy will be indicated in the paper which Mr. T. C. Courtney, chairman of C.I.E., is to present to the congress. The provision of faster train services on trunk routes such as Dublin—Cork, Dublin—Galway and Dublin—Sligo has undoubtedly done much to regain as well as retain traffic. The results of themselves cannot, however, turn the deficit on railway operation into a profit and it is generally agreed that there should be considerable pruning of railway mileage.

How to Cut the Losses?

WHEN it comes, however, to the question of what should be abandoned such concurrence vanishes in a trice. The Beddy committee in its report (MODERN TRANSPORT, May 25, 1957) suggested that the reduction should be from 1,918 miles to a figure of approximately 850 and that, in addition, many of the intermediate stations should be eliminated on the lines that were retained. The present Government, which is not, as it happens, of the same political persuasion as that which set up the committee, has not accepted the proposals as to which lines should be abandoned or which stations closed, but it has, in the Transport Bill, 1958, which has received a second

reading in the Dail, provided that C.I.E. may close any line or any station for which it considers there is clearly no future. It may, moreover, do this without reference to the Transport Tribunal, but there is a complication in the shape of a statutory direction not to terminate any particular rail service unless satisfied that there is no prospect of its continued operation being economic within a reasonable period. The Minister of Industry and Commerce pointed out in the debate that, since the board of C.I.E. was under a general obligation to eliminate loss by March 31, 1964, the fate of any branch line depended on sufficient business being available to justify its retention. The future of lines and stations would consequently depend primarily upon local support.

Gallant Great Northern

THE position of this undertaking is not the only matter which is receiving Government attention at the present time. The Great Northern Railway Board set up nearly five years ago by the Republic of Ireland and the Government of Northern Ireland came really too late to preserve intact an undertaking which had been hampered for years by the partition of Ireland, even though this duality had brought it certain benefits during the 1939-45 war and the years which immediately followed. The belated concern of the Ulster Government could not, however, offset the effects of the difficulties which had earlier been imposed upon it and the true value of much of its pioneering work with diesel units has been obscured. Two other railway undertakings of 3 ft. gauge lie largely in the republic. The Londonderry and Lough Swilly has the distinctions of earning a profit and of operating only road vehicles, while the County Donegal Joint Committee has served a sparse territory with devotion and considerable enterprise for many years without deriving much profit therefrom. The probable abandonment of the G.N.R. route from Belfast to Derry will almost certainly seal the fate of the narrow-gauge system, which connects with it at Strabane.

On the Highways

PUBLIC road transport in the republic is largely provided by C.I.E. and the G.N.R., although there are 30 or so independent bus operators and a substantial number of licensed road hauliers with, however, restrictions on the scope of their activities. Both they and the large undertakings have been adversely affected by the marked growth in the past eleven years in the number of traders' vehicles, some of which are alleged to indulge in illegal public carrying. The new legislation does little directly to meet these complaints, although it puts C.I.E. in a stronger competitive position by relieving it of common carrier obligations and enabling it to make agreed charges. There may well be increased scope for the independent bus operator and haulier by reason of the large concern being relieved of the obligation to provide services in substitution for abandoned railway facilities, but such opportunities may not prove especially attractive with operating costs at their present high level. Inland water transport has languished in Ireland of recent years and C.I.E. as owner of the canal system and major operator thereon has been blamed, more than unfairly, for this. It has not admittedly shown any great enthusiasm for its responsibilities, but it is hard to see what potential development there could be. The new Bill should at least relieve it of the more onerous duties connected with the maintenance of unused waterways and it should not be forgotten that it has been making a vigorous endeavour to revive passenger traffic on the Shannon, undeterred by the indifferent weather of the past two summers. Reference to Irish transport should include mention of Aer Lingus, some of the activities whereof are the subject of an article on page 7, the two admirable airports at Shannon and Dublin—the latter will be visited by Institute of Transport members—and the development of the Port of Dublin, which is also to be inspected.

Forthcoming Events

- May 31.—Light Railway Transport League. Paper by Mr. V. E. Burrows, "The Tramways of Rome." At 153 Drummond Street, N.W.1. 3 p.m.
- June 1.—Omnibus Society (Northern). Visit to Cumberland Motor Services, Limited, Whitehaven.
- June 3-6.—Institute of Transport Congress. In Dublin.
- June 6.—Railway Club. Paper by Mr. D. Culkin, "The Hessian Direct Line." At Royal Scottish Corporation, Fetter Lane, E.C.4. 7 p.m.
- June 7-12.—Permanent Way Institution. Summer Convention. At Weston-super-Mare.
- June 14.—Permanent Way Institution (Leeds and Bradford). Visit to Hull Docks.
- June 15.—Permanent Way Institution. Visit to new Tunnel works, Greenwood-Potters Bar (E.R.).
- June 15.—Omnibus Society. Study Tour of Doncaster area independents. Meet Wakefield Bus Station. 1.15 p.m.
- June 20.—Permanent Way Institution. Visit to new Tunnel works, Greenwood-Potters Bar (E.R.).
- Institute of Navigation. Discussion, "The Significance of Blunders in Navigation." At Royal Geographical Society, Kensington Gore, S.W.7. 3.15 p.m.
- June 22.—Omnibus Society. Round Britain Tour.
- June 22.—Omnibus Society. Visit to South Wales Area.
- June 30-July 4.—Institution of Naval Architects. Meeting in Paris.
- September 1-7.—Society of British Aircraft Constructors. Flying display and exhibition. At Farnborough. (Public days September 5, 6 and 7.)
- September 26-October 4.—Commercial Motor Transport Exhibition. At Earls Court.
- September 28-October 7.—International Railway Congress. At Madrid.
- November 5-16.—International Motor Show. At Turin.

SOME SPECIALISED RAPID TRANSIT SYSTEMS

For High-Speed Access to Airports and Interurban and Urban Operation

THE KEARNEY HIGH-SPEED RAILWAY

POSTWAR growth of air traffic has led to numerous proposals for short specialised rapid transit railways between city centres and their airports, as an alternative to ordinary railway facilities, for the purpose of overcoming delays and slow-running on roads choked with vehicles. In London, for example, an 85-min. allowance was made for British European Airways coaches between Waterloo Terminal and London Airport, a time that has been concealed rather than fundamentally reduced by the transfer to the West London Air Terminal in Cromwell Road. Various special transit proposals have been described in our columns by which the journey time could be reduced to 15 to 20 min. over a comparable distance; some alleviation may be given to the road running time by the completion of the Cromwell Road Extension, the flyover at Chiswick, and the further improvements proposed on the Great West Road, but with a fast-growing volume of traffic it may well be that such improvements are merely temporary. A separate right-of-way for the special service therefore seems an essential ingredient in the successful solution of the problem.

Interurban Problems

As well as urban rapid transit systems, of which airport access is a particular facet, considerable further attention has been devoted of recent years to interurban transit problems. Air services have limiting factors through airport access difficulties; the helicopter has a number of well-known limitations; the combination machine emerging from a brilliant British design office is only at the beginning of its career. Presumably inspired by the fact that over the toll roads of the United States coaches are able to achieve schedules which make them more than competitive with ordinary express trains, a Ford research team in the U.S.A. has been investigating the prospects of a rubber-tyred vehicle which is intended to operate at speeds of up to 500 m.p.h. Rolling friction is eliminated by lifting the wheels slightly off the road by an air jet.

The system strikingly resembles an officially propounded British system for the flight of large objects and also has a quaint resemblance to the levitated railway designed by Monsieur Bachelet in 1913, in which the car was lifted from the track by eddy currents and traction was effected magnetically. Both systems appear to reduce rolling friction to a low value, but still, from the viewpoint of high-speed transit, leave the formidable factor of air resistance to be overcome. Realisation of the power to be saved by fairing and from aerodynamic studies at speeds over 100 m.p.h. seemed greater earlier in the century than now, judging from the designs of various early twentieth-century rapid transit system rolling stock. A very large

which was used in a Cheshunt brickworks and in the Deptford Royal Naval Victualling Yard, where it served much as a fork-lift truck might today in transporting barrels. Most of the later unorthodox railways have been designed with passenger traffic principally in mind.

The lateral oscillation and hard riding of mid-Victorian railway travel caused a number of inventors to investigate the possibilities of an improvement over the orthodox twin-rail railway; the desirability of concentrating the weight on one rail to overcome lateral oscillation became apparent. The increasing practicability of electric traction towards the end of the century and the potential traffics for high-speed railways between garden cities and large centres of industry or between large centres of population caused a revival of interest.

To this a filip was imparted by the Lartigue-Behr "monorail," which actually used at least three rails on an A-shaped structure in the middle of vehicles, and on which a demonstration car built by the Gloucester Railway Carriage and Wagon Company attained 98 m.p.h. Some experiments on a 4 ft. 8½ in. gauge military railway at Zossen near Berlin in 1903 reinforced the view that the orthodox railway was unsuited to high speeds; although very heavy

variations have included the propeller-driven Bennie railplane and the pneumatic-tyred version sponsored by International Monorail. An extraordinary number of American cities has expressed interest in various elevated and suspended railway schemes with little regard for the fact that in other American cities, especially Chicago and New York, the authorities have been at pains to remove the ugly elevated railways; vast sums have been spent on getting the whole of the rapid transit facilities into subways, in fact.

Single Bearing Rail

Two systems have been brought to our notice in which the mastery of destructive or uncomfortable lateral oscillation is gained by carrying the weight of the train on a single bearing rail. One of these, devised by Louis Brennan in 1909-10, employs one rail only and the train is supported

by the gyroscopic action of a pair of gyroscopes rotating at high speed. The designer had mainly in mind construction of military railways—one rail could be laid with little regard to vertical or horizontal alignment and the gyroscopes could traverse it without difficulty. In the upshot the 1914-18 war found use in plenty for orthodox railways, but none for the complication of gyroscopes and operation of individual vehicles by

air line and in particular as adapted for use on an elevated railway should circumstances arise in which it is desirable to build such a railway, or where a crossing over existing roads or railways is required. The plan view shows the cross-bracing of the guide rails for a double-track structure. On curves a small displacement of the upper rail from the vertical position over the running rail gives the effect of superelevation. The pressure on the upper rail is quite small, due in part to the low centre of gravity of the rolling stock. The position resembles that of a man balancing a 13-ft. ladder easily with one finger from a first-floor window, whereas he would find it impossible to effect the same task even by exerting all his strength from the bottom rung of the ladder.

Versatility

For underground city railways or tunnels on interurban lines the system is readily adaptable to a circular section lined tunnel, the upper rail then being bolted to the top segment while the running track is supported at any convenient height on the invert. The single running line can be adapted to run in the 4-ft. way of existing railways without difficulty and with simple point and crossing work; the upper rail would then need to be elevated to clear the loading gauge of the largest 4 ft. 8½ in. gauge rolling stock that might be employed. The Kearney gauge could be expanded vertically if required to clear overhead wires. The railway is adaptable to surface, elevated or tunnel operation without modification.

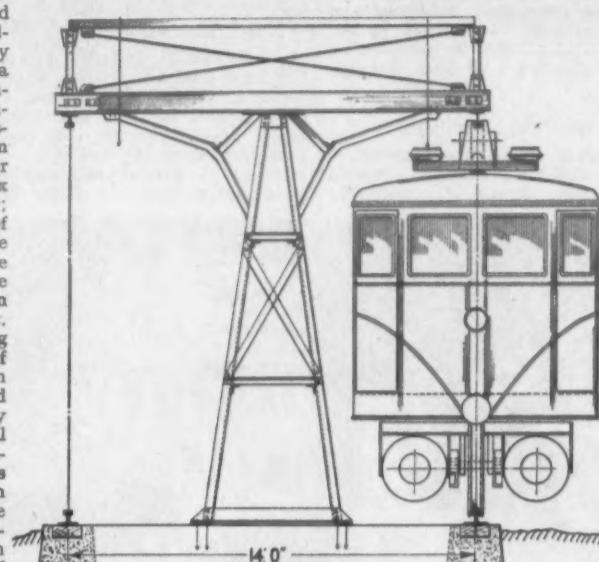
As might be surmised, a train fixed positively between two rails has an extraordinary degree of stability and sharp curves (if necessary, without superelevation) and steep gradients, with sudden changes of gradient, can be traversed without difficulty at high speed if required.

Tube Scheme

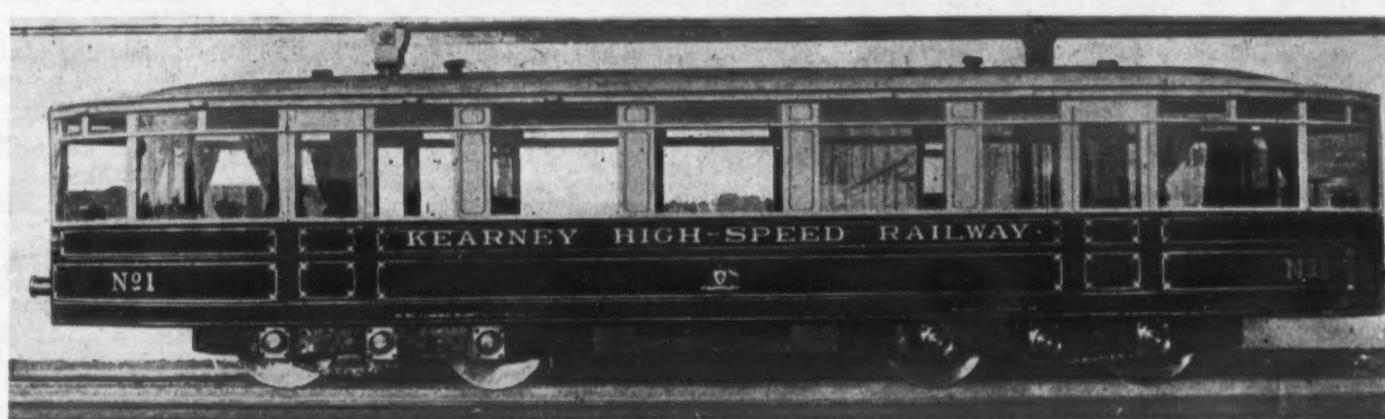
Use is made of these characteristics in a tube railway proposal which follows the suggestion of the Royal Commission on London Traffic that tube railways might achieve some capital economy by combining surface or shallow stations (with elimination of costly lifts, escalators, enlarged platform tunnels and connecting passages excavated at considerable depths) with deep level tube tunnel linking them. Whereas even on the standard London tube gradient of 1 in 30 a ramp of 1,800 ft. would be needed to achieve a depth of 60 ft., the limiting gradient for Kearney trains is set at 1 in 7, on which gradient an incline 770 ft. long would take the line to a depth of 110 ft. and, with free acceleration, largely by gravity at 0.14 g., or say 4.6 ft. per sec. per sec., 60 m.p.h. would be attained.

As the forces of gravity and of acceleration due to gravity are in balance, no sensation is felt by the passenger on acceleration on the 1 in 7 gradient. The deep-level section of the tunnel is coupled to the gradients by large-diameter vertical

curves and at the end of the station-to-station run the rising gradient acts to reduce speed without the wear and tear of a brake application. In fact, as acceleration is wanted at the beginning of the run and a slowing down at the end, something for nothing is gained twice between each pair of stations. In addition the average working speed is high and so less rolling-stock is needed. With stations at the Paris Metropolitan distance of



Section through Kearney double-track structure for surface operation

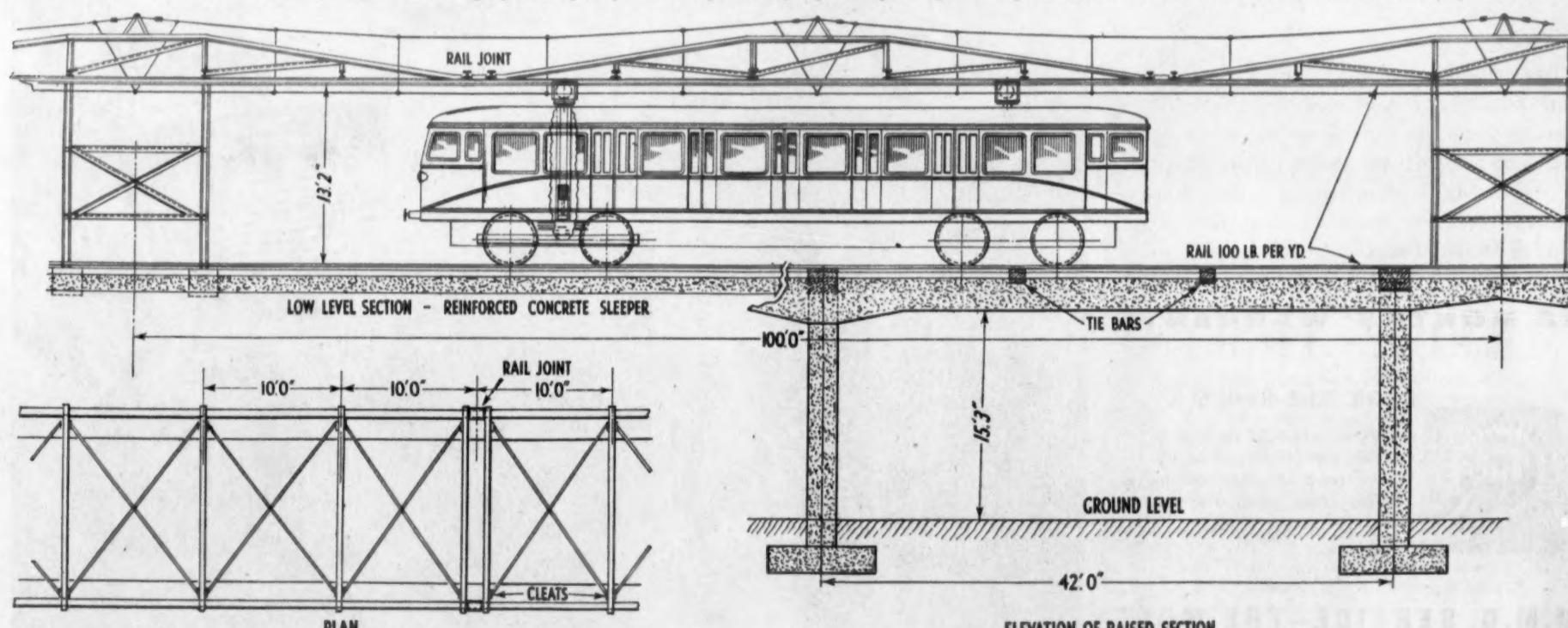


The full-size car built for demonstration purposes by the Brush company at Loughborough in 1910

electric motor coaches achieved 130 m.p.h. the greatly strengthened permanent way was left distorted. The French achievement of 151 m.p.h. between Dijon and Beaune and then 205 m.p.h. between Lamotte and Morcenx on two successive days with different types of locomotive the following year was yet half a century ahead, of course. Such speeds are attainable on the orthodox standard gauge railway only under very carefully

petrol-electric generator sets, objections which must also weigh heavily in any civilian application of such a railway.

The other single-bearing rail system was propounded by E. W. Chalmers Kearney as a result of a study of high-speed interurban service requirements and also the needs of rapid transit railways in cities. It offers a combination of speed, operating economy and reasonable sim-



ELEVATION OF RAISED SECTION

Elevation of Kearney track set out on an elevated or bridge structure, with, below, plan view of cross-bracing of upper rails on double-track open-air section. The system can also be adapted to tunnel operation or over existing railway formation

number of schemes for safely attaining higher speeds or greater economy on railways has in fact been worked up during the railway era, as has recently been re-emphasised by Day and Wilson's study of the subject, *Unusual Railways*.

First off the Mark

Hardly had the railway begun to emerge from the chrysalis stage by which it evolved from the private horse tramroad to the modern commercial power-operated railway system than inventors began to produce variations on the normal two-rail system. First off the mark was Henry Palmer, who as early as 1821 designed a monorail system

guarded circumstances in order to ensure safety.

At the very close of the nineteenth century one of the few specialised railways to be in long continuous service began operation in Germany between Barmen and Elberfeld, now known as Wuppertal. This is a suspended railway and is highly suited to the local circumstances of closely spaced stations and a heavily built-up area at the bottom of a valley in which it was convenient to place the railway on A-shaped supports above the River Wupper. The suspended type of monorail has, for various reasons, made a constant appeal to inventors in various forms, the most recent example being the demonstration line in Japan described in our issue of March 15 last. Other

plicity. The vehicles can be operated singly or in trains of any reasonable length and they are supported positively by an overhead guide rail placed vertically over the running rail. Variations in gauge between the rails (normally about 13 ft.) are taken care of by a spring (or in the latest design, a compressed air) connection between the supporting bogie pin and the mounting of the corresponding overhead guide wheel. This is surrounded by a frame which effectively prevents the car from parting company from the overhead rail.

On this page we illustrate a cross-section of a Kearney car which shows this safety arrangement. The elevation drawing reproduced below shows the structure as it would be erected for an open-

1 mile, 25 m.p.h. could be averaged; the 1-mile London tube spacing in the central area could be operated at 27.7 m.p.h.; and with stations one mile apart a 38-m.p.h. schedule could be maintained. There are some obvious advantages in this form of gradient railway for river crossings such as from North to South Shields under the Tyne.

Airport Access

One way of treating the London Airport problem would be a tube approach from some West London traffic centre such as Shepherds Bush. A nearly straight route via Goldhawk Road might include intermediate stations at Kew and (Continued on page 6)

LORRY—BUS—COACH**School Bus Subsidy Issue**

UNTIL last March, Maidstone and District Motor Services, Limited, operated its bus route 21 to connect the village of Westwell with Ashford, but over the year it lost 2d. per bus mile and was discontinued. A Westwell coach proprietor, Mr. W. C. Cook, has now applied to the South-Eastern area Traffic Commissioners at Ashford to run between the same points. The application was opposed by Maidstone and District, and the East Kent Road Car Co., Limited. At the public inquiry, Mr. J. Griggs, clerk to West Ashford Rural Council, supporting the application, said the Westwell service was obviously unremunerative for Maidstone and District, and his council understood why it had been withdrawn. Because of the hardship to schoolchildren the education authorities had arranged a school contract with Mr. Cook, who would also pick up more children at Potters Corner on the A20. Meanwhile, there was a certain number of people who worked in Ashford and had to walk to the main road or the station. Mr. Cook now wanted to be able to take these passengers on his school bus, and also to pick up a few more at Potters Corner.

Mr. Cook told the Commissioners that the education authorities at present paid him 32s. 6d. a day in term time to carry the children to Ashford. They had offered him 30s. a day if this application was granted and he could take other passengers. His intention was to run two buses a day at school times, and one extra on Tuesday afternoons. It was stated that the cost of season tickets for the children, when carried by M. and D., amounted to 11s. 1d. a day. Mr. E. S. Fay, Q.C., for the companies, commented: "You are, in effect, subsidising the difference in cost between season tickets and the price you pay Mr. Cook." He went on to say that this was a very important matter which might have far-reaching results on rural services, scarcely one of which was now paying its way. When Maidstone and District was running the Westwell service, the education authority took advantage of the very low scholar's rates to transport the children. If the authority had come along with a concrete offer of a subsidy, it would have been considered, and he hoped that if this same situation arose elsewhere, the authority would consider subsidising the regular operators before they were forced off the road. In this particular case, Maidstone and District was in no way trying to prevent people in Westwell having a bus service, but strongly objected to people being picked up at Potters Corner, which was well served by M. and D. buses. Mr. D. G. Rawlinson, Maidstone and District assistant traffic manager, stated that he was concerned with travellers receiving a subsidy from the education authorities. There were, he asserted, many other rural services which could well do with a subsidy which might make all the difference as to whether they could continue or not.

Mr. H. J. Thom, chairman of the Commissioners, said the question was one of national importance. The Commissioners felt that by

supporting the regular services, the education authorities would be helping to keep companies alive, and it was one of the methods in which they might be able to eke out their non-remunerative rural services. The application would be granted, to exclude any picking-up points on the A20 road or beyond the Ashford sign at Westwell, but this decision would be suspended and, in the meantime, Maidstone and District and the education authorities should meet and see if the service could be provided on reasonable terms. If this could be done, the case would be reviewed.

Colombo Trolleybus Services

THE Ceylon Transport Board has declined to take over the trolleybus services operated by Colombo Municipality. It says it cannot take



A Bedford four-by-four vehicle for the Southern Electricity Board, equipped with auger for pole erection; right, the new Seddon Mark 17 chassis, with Perkins R6 engine, is used for this 1,700 cu. ft. van, constructed by the chassis manufacturer

over these services as its hands are already full with the bus services that have been nationalised. The Special Commissioner of Colombo Municipal Council, Mr. B. A. Jayasinghe, had offered the trolleybus services to the Transport Board. Now that a definite decision had been made on the subject, he has stated that he would take up with the Minister of Local Government the question of expanding the services in order to cut down the annual losses.

Transport from New Board Mill

COMPLETION of a new board mill for Colthrop Board and Paper Mills, Limited (a Reed Paper Group company), at Thatcham, means further demands on the associated road haulage business by Cropper and Colthrop Transport, Limited. With the exception of customers who use their own transport, the entire haulage for the new mill is being handled by Cropper and Colthrop Transport. It will be recalled that this company, founded as Thatcham Road Transport

Services, Limited, in 1919 by Mr. S. J. Ashman, managing director of the present company, was nationalised in 1948 and became a British Road Services depot. In 1954 the depot returned to private ownership, being bought by Cropper and Co., Limited, and given its present name. The fleet comprises 89 A-licensed vehicles, including 7-tonners, a number of 10-12 ton articulated vehicles and a considerable proportion of eight-wheelers. All repairs, including complete overhauls, are undertaken in the company's workshops at Thatcham. The fleet collects waste paper from all over the country. Another regular job is carrying pulp from Kingston, where lighters are unloaded. Finished products are taken to every part of the country 363 days a year.

Durham Independent Wage Award

AN Industrial Disputes Tribunal has decided, following an inquiry, that Trimdon Motor Services, Limited, a Trimdon, Co. Durham, bus independent, has not been observing recognised wages and conditions laid down for the road passenger transport industry. The firm, which employs 76 drivers and conductors and seven maintenance men, was alleged to be under-paying

weakened and the busmen would have forfeited pay which they would find it extremely difficult to make up. [If it is assumed that the net loss of income during a four-week strike is about £20 and that the gross product of the 8s. 6d. per week basic award is 10s., it would seem that an individual busman would have to work for 40 weeks before his weekly increase wiped off the financial loss represented by the strike.—Editor.]

Nottingham Considering Incentive Bonus

AN incentive bonus scheme for bus crews is under consideration by Nottingham City Transport and the Transport Committee. It would be awarded for increased productivity and efficiency. Mr. Sidney Hill, chairman of the Transport Committee, Mr. W. G. E. Dyer, his vice-chairman, and Mr. Ben England, general manager of the department, have had meetings with officials of the Transport and General Workers' Union to gather their reactions and are now to report back to the full committee.

Worthing Bus Services Review

IT has been decided by Worthing Town Council to ask Southdown Motor Services, Limited, to a full-scale discussion on the town's bus services; a sub-committee of six committee chairmen has been set up for the purpose. Alderman J. Arthur Mason suggested that Southdown was depending too much on services from outside the town to supply local needs.

Liverpool City Tours

LAST summer Liverpool Corporation Passenger Transport Department carried 115,000 passengers on its two "See Liverpool by Bus" tours, which have as their focal points 15th-century Speke Hall and Speke Airport respectively. A refreshment halt is made at either point. The tours are being repeated this year, running twice on Saturdays and Sundays at a fare of 2s. 6d. Over the Whitsun weekend 36 buses were used on the two tours to carry 1,813 passengers.

Chicago Looks to Park-and-Ride

THREE proposals for solving the traffic and public transport problems in Chicago have been advanced by the Chicago Transit Authority to the city plan commission, which is developing a co-ordinated overall plan for greater Chicago. They are: a \$315 million 20-year rapid transit expansion programme; construction of multi-storey park-and-ride garages combined with covered rail-bus interchange facilities at outlying rapid transit stations or terminals, each with an ultimate capacity of 6,000 garages; construction of arched shopping facilities in downtown Chicago.

Bus and Coach Developments

J. Dodds, Lesmahagow, applies for excursions and tours therefrom licensed to Meikle and McRae. Barton Transport, Limited, proposes a new weekday service between Brancote and Chilwell via Deans Croft and Beeston. Liverpool Corporation proposes a new limited stop service daily between Kirby (Quarry Green) and Liverpool (South John Street). Western Welsh Omnibus Co., Limited, proposes a Friday service between Abergavenny and Usk via Llanvihangel Gobion, Llancayo and Bettws Newydd. London Transport is seeking to introduce an 8s. 6d. road-rail rover ticket which would be available on Saturdays, Sundays and public holidays on all central bus and trolleybus routes and on London Transport trains.

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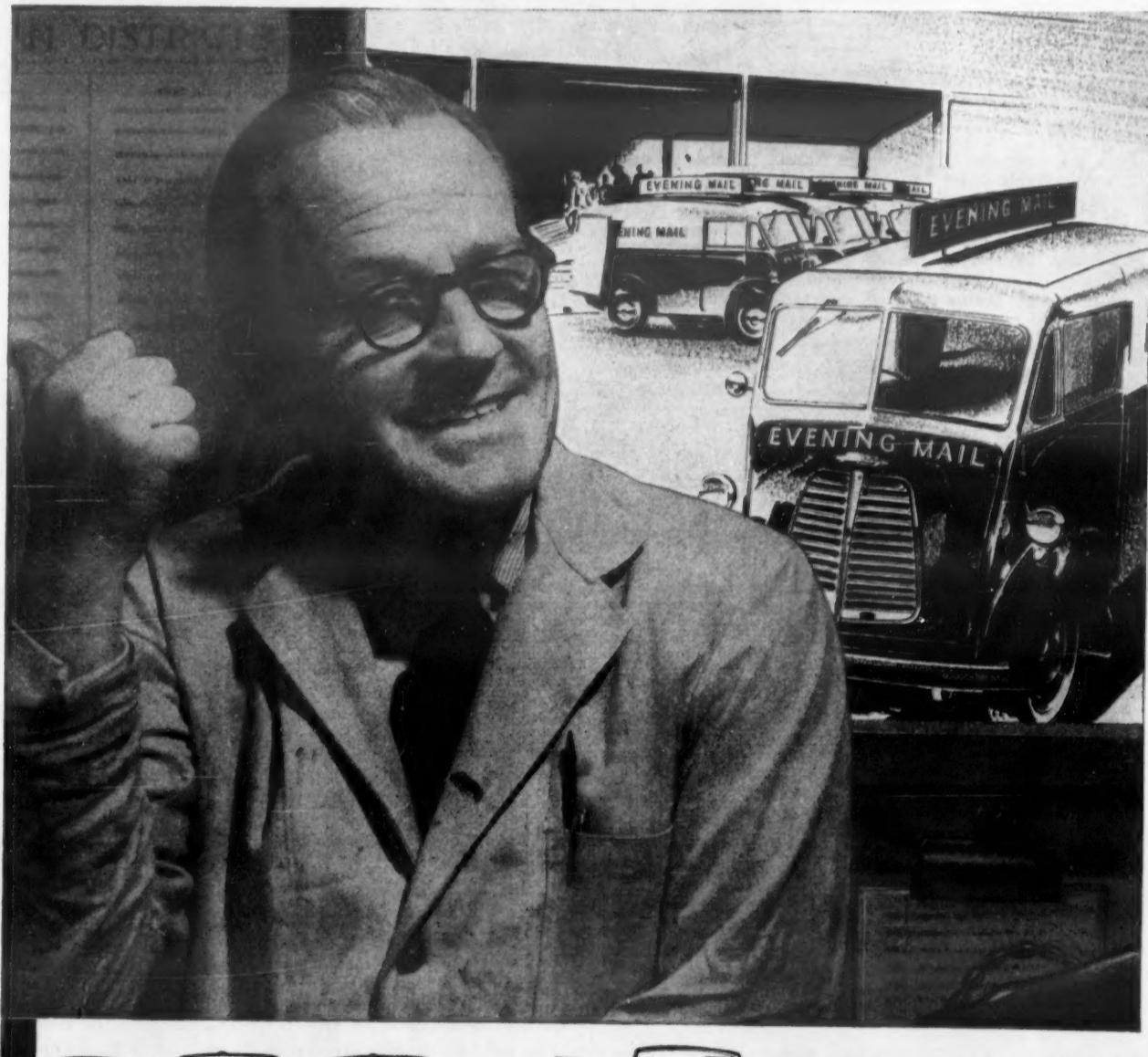
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Minister's Comments on Bus Strike

SPEAKING in his Woking constituency—in the midst of the London Transport Country area—last Wednesday evening, the Minister of Transport permitted himself the observation in regard to the London bus strike that there was "a strong school of thought which proclaimed that the buses should not in any case be allowed to return to the London streets in great numbers." It was difficult, therefore, to see who would be better off as a result of the strike. The finances of London Transport would certainly be greatly



Overseas Business: Nuffield Exports Ltd., Oxford and 41-46, Piccadilly, W.1.

BMC 15/R

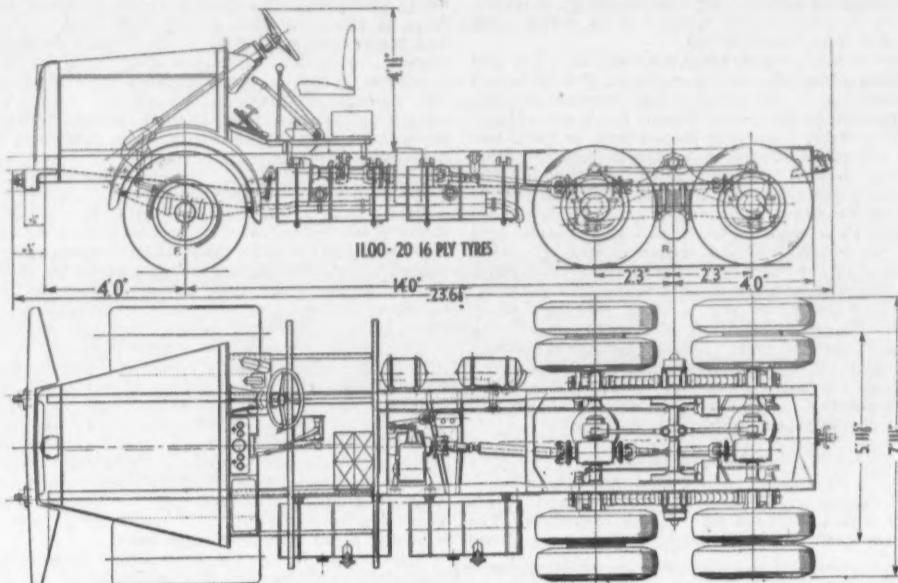
COMMERCIAL VEHICLE TEST

A.E.C. Bonneted Mammoth Major Six Tractor*

HAULING TASKER SEMI-TRAILER WITH 22½-TON LOAD

In this country, the haulage of an indivisible load that brings gross vehicle weight or an individual axle weight above the legal maximum is a slow business. Even when traffic density, the limitations of the roads or the dimensions of the vehicle or its load do not circumscribe speed, legal limits of 12 and 5 m.p.h. are imposed on the two main classes of extra-heavy haulage unit.

put of 165 b.h.p. at 2,000 r.p.m. and 505 lb./ft. torque at 1,100 r.p.m. Transmission is through a 15-in. dia. single dryplate clutch, with external-shoe drum-type clutch brake, and five- or six-speed constant-mesh gearbox. Mounting is by means of a rigid banjo crossmember, to which both the rear of the engine and front of the gearbox are bolted, and a tubular crossmember to which the front of



Principal dimensions of the A.E.C. Mammoth Major 6 tractor are shown in these drawings

Consequently, for home operation at gross weights up to about 40 tons, a suitably geared comparatively low-powered tractor will generally meet requirements.

In many countries overseas, however, where distances to be covered are generally greater, and particularly in developing areas of the world where traffic density is low, such low speeds are un-

convenient. For home operation at gross weights up to about 40 tons, a suitably geared comparatively low-powered tractor will generally meet requirements.

The engine is attached through spring-loaded bolts. The six-speed gearbox employs an overdrive top gear train enclosed in a separate housing bolted to the rear of the standard five-speed main gearbox fitted with extended shafts. The separately mounted two-speed auxiliary gearbox provides an alternative range of six ratios reduced by 1.62 to 1 in the low position. This gives an effective spread

TEST RESULTS AT A GLANCE

Vehicle Details	Test Results
MAKERS: A.E.C., Limited, Southall, Middlesex, and Taskers of Andover (1932), Limited, Andover, Hants.	ROUTE: Southall to Hindhead and return.
TYPE: A.E.C. Bonneted Mammoth Major 6 tractor and Tasker 30-ton drop-frame semi-trailer.	CONDITIONS: Dull with showers early.
ENGINE: A.E.C. six-cylinder direct injection diesel, bore 5½ in. (139 mm.), stroke 5½ in. (145 mm.), swept volume 660 cu. in. (10.3 litres), 165 b.h.p. at 2,000 r.p.m., 505 lb./ft. (69.8 kg./m.) torque at 1,100 r.p.m.	RUNNING WEIGHT: 39 tons 2½ cwt. (39,725 kg.) plus crew of three.
TRANSMISSION: Clutch, single dryplate 15 in. (40 mm.) dia., 257 sq. in. (1,658 sq. cm.) total friction area; gearbox, six speeds constant mesh (except first and reverse), ratios 6.6, 4.53, 2.64, 1.57, 1 and 0.763 to 1 forward, 1 to 1 reverse; auxiliary gearbox, two speeds constant mesh, ratios 1 and 1.62 to 1; driveshafts, 1700-series open shafts between gearbox and auxiliary gearbox and auxiliary and leading axle, 1600 series open inter-axle shaft, all with Hardy Spicer needle roller bearing universal joints; rear axles, two-axle drive with offset spiral bevel and double-helical double-reduction units, ratios 8.4 to 1.	PAYOUT: 22 tons 10 cwt. (22,838 kg.).
BRAKES: Air pressure operated to six wheels, front 15½ in. (394 mm.) by 4½ in. (112 mm.), rear 15½ in. by 6½ in. (165 mm.), total lining area on tractor 7,054 sq. in. (6,800 sq. cm.); multi-pull handbrake mechanically connected to bogie brakes.	FUEL CONSUMPTION: Over 14 miles continuous running 6.6 m.p.g. (2.32 kg./litre) at 27 m.p.h. (43 k.p.h.) average speed. Better run of 7 miles 7.2 m.p.g. at 30 m.p.h.
TYRES: 11.00-20 16-ply single front, twin rear.	GROSS TON/M.P.G.: 260 (93.5 tonnes/km./litre).
WHEELBASE: 14 ft. (4,267 mm.).	PAYOUT TON/M.P.G.: 14.85 (53.5 tonnes/km./litre).
WEIGHT: Tractor complete with fifth-wheel mounting in kerb trim 7 tons 14½ cwt. (7,862 kg.); trailer, without spare wheel, jacks and loading ramps, 8 tons 18 cwt. (9,043 kg.).	TURNING CIRCLE: Tractor only (estimated) 51 ft. (15.5 m.).

ADJUSTMENTS DURING TEST: None.

ACCELERATION: Average of four runs in each case,

0-20 m.p.h. 19.8 sec.

0-30 m.p.h. 46.5 sec.

BRAKING: Average of three stops from 30 m.p.h. on dry tarmac 51 ft. (15.5 m.), equivalent to 19 ft. per sec. per sec. or 0.59 g. average retardation. Tapley meter readings 65-67 per cent.

ESTIMATED TOP SPEED: 47.48 m.p.h. (77 k.p.h.).

OVERALL FUEL CONSUMPTION: For 90 miles, including about 20 miles in suburban traffic and numerous stops for acceleration and braking tests, 5.3 m.p.g. (189 km. per 100 litres).

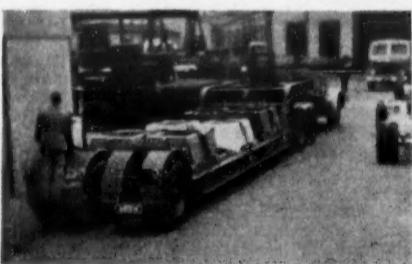
economic and a more powerful propulsive unit is called for. As the new motorways now under construction and planned in this country come into use, we can expect this class of haulage to operate on them wherever possible rather than on existing narrower roads, when here too a fairly high standard of performance will be necessary if the vehicles are not to be a nuisance to other motorway traffic.

Versatile Vehicle

The British industry now produces a number of useful extra-heavy haulage vehicles, mainly for overseas customers; in this category is the A.E.C. bonneted Mammoth Major six-wheeled tractor, which we recently tested on the road coupled to a Tasker 30-ton low-loading semi-trailer at a gross weight just short of 40 tons. The tractor is powered and geared to provide a reasonably lively performance and a top speed in excess of 45 m.p.h. at

double-reduction axles.

The standard double-drive bogie employs 8-in. centre overhead worm gear axles with fully floating half shafts and interaxle differential and offers optional final drive ratios. The alternative arrangement for special applications and available when the auxiliary gearbox and larger-capacity Still-tube radiator are fitted has offset spiral bevel units with secondary double-helical reduction gears, giving an overall ratio of 7.84 to 1, and the vehicle tested was thus equipped. Fully articulated bogie suspension embodies two inverted semi-elliptic springs pivoted on a transverse tube mounted in cast-steel brackets rigidly attached to the channel-section chassis frame, which has a channel-section flitch fitted in the portion of the frame over the bogie.



Reversing on to the fuelling point in a rather crowded yard was a good test of judgment and also, without assisted steering, of strength of arm

this weight, enabling it to keep up with the main body of heavy traffic on the open road, and with a commendable fuel economy.

The vehicle tested is one version of a versatile basic A.E.C. chassis with a wide range of available options which fit it for a variety of heavy haulage roles as a load carrier or as a tractor. Alternative bogie arrangements, axle ratios and number of gears in the main gearbox are available, as also are an auxiliary gearbox, large-capacity radiator and oil cooler; right- or left-hand control is offered and a hydraulic steering servo is an optional extra. The chassis has an overall width of 8 ft. and as a tractor designed for a gross combined weight of 40 tons, it has a wheelbase of 14 ft. and an overall length of 24 ft. 7 in. (increased by 5½ in. when the large-capacity radiator is fitted). The lorry chassis has a wheelbase of 17 ft. 3½ in. and is designed for a gross weight of 24 tons where legally permitted.

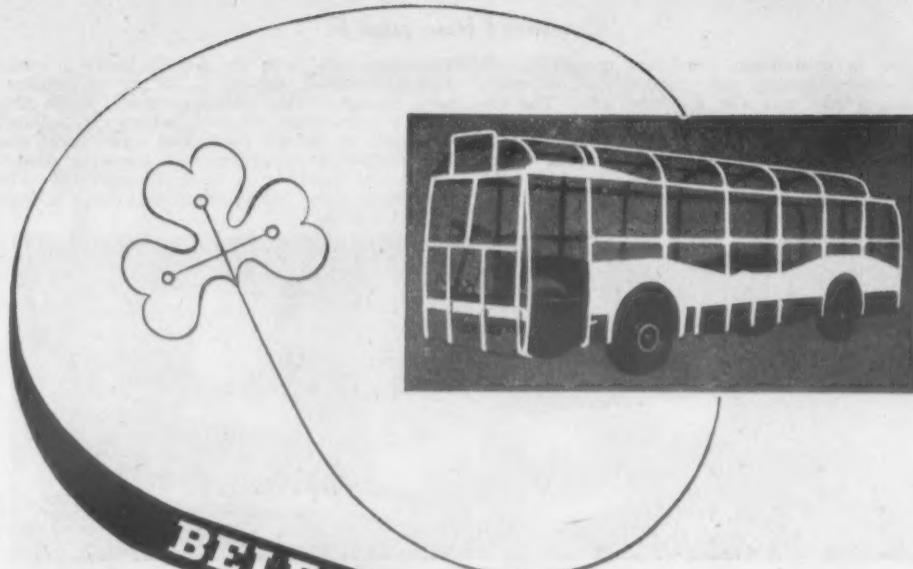
The chassis is powered by the A.E.C. vertical six-cylinder direct-injection diesel engine of 690 cu. in. (11.3 litres) capacity with a maximum out-

The spring ends are secured to the axles by forks which permit the bogie to articulate without twisting the road springs. Torque reaction is taken by ball-jointed rods between the tops of the axle gear casings and a tubular crossmember which connects the top ends of the spring pivot-tube brackets. Rebound is limited by wire rope slings and the two longest leaves of each spring are shot-peened on the tension faces to increase fatigue resistance. With the double-reduction axles, articulation measured at the bump pads is 3½ in., giving 7 in. of relative displacement between the wheels on one axle (14 in. when diagonally opposite wheels are raised) without any wheel losing contact with the ground.

Dimensions and Weights

The Tasker drop-frame semi-trailer, with 20-ft. long loading well, had an effective length from the coupling king pin to the rear of the in-line four-wheel detachable oscillating-axle running gear of about 33 ft., giving an overall length of the combination of about 53 ft. Tare weight of the

(Continued on page 6)



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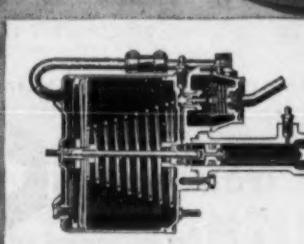


FOR THE LIGHT TRUCK

For light trucks with forward control, the Lockheed 14" by 2 1/2" two-leading shoe front brakes are recommended, with the 14" by 2 1/2" brake with transverse wheel cylinder for the rear wheels. This combination gives a good braking balance.

These brakes have excellent adjusters and may be employed with either the 14" or 15" master cylinders as required.

The Hydrovac® type of vacuum-operated master cylinder (shown on left) is the simplest form of servo for the petrol engined vehicle.



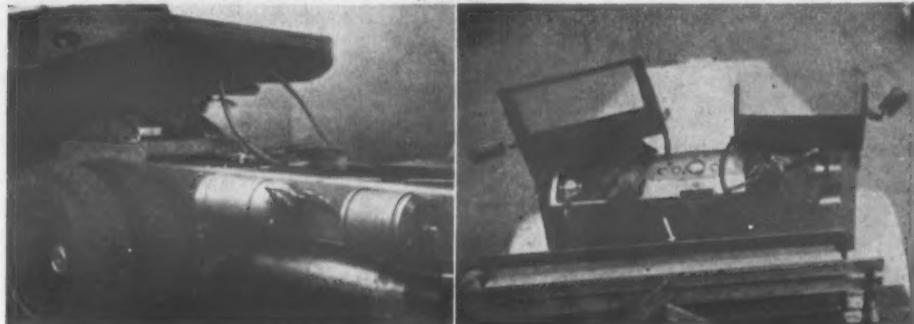
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A.E.C. Mammoth on Test

(Continued from page 5)

tractor in operational condition, complete with fifth-wheel mounting, was 7 tons 14 cwt., of which 3 tons 9 cwt. was over the front axle. The unladen trailer weight, without spare wheel, jacks and loading ramps, is quoted by the maker as 8 tons 18 cwt. and this is brought to about 9 tons 14 cwt. when these accessories are carried. For the test, the trailer bed was evenly loaded to give a

circuitous route from the A.E.C. Southall works through Hanwell, Brentford, Isleworth, Twickenham, Hampton Hill and Hampton. While this route avoided some doubtful bridges, it included a number of narrow roads and tight turns and afforded ample opportunity of assessing performance and handling in fairly heavy traffic. In this sort of going, the auxiliary gear could be kept



Kingpin-type S.M.M.T. Standard 55 coupling and air-brake and electrical connections are easy to reach; right, a view into the temporary "office" shows the steeply raked steering wheel and conveniently placed controls and instruments

gross weight of 39 tons 2 cwt., representing an estimated payload of 22½ tons. In this condition, the weight imposed on the front axle was increased by only 9 cwt. and the balance was borne almost equally by the tractor bogie (eight 11.00-20 16-ply tyres), which weighed 16 tons 14 cwt., and the trailer axles (four 14.00-22 16-ply tyres), which turned the scale at 18 tons 9½ cwt.

Such dimensions and weights precluded the use of our standard test route and a more-open route on the Portsmouth Road (A3) between Esher and Hindhead was selected, reached by a rather

permanently in the high range and the vehicle could be got under way on level road with light throttle in third gear. Acceleration to normal traffic speeds (average times taken to reach 20 and 30 m.p.h. are given in the table) was distinctly good for this class of vehicle and, once under way, steering was reasonably light and accurate.

The advisability of specifying the optional steering servo for a vehicle to be used much in congested conditions or where a fair amount of manoeuvring is necessary was however brought home to us on several occasions. Speed on most

roundabouts and on a number of tight corners was dictated solely by the time taken to wind on the necessary lock, and reversing the outfit through a right-angle and about 70 yd. along a rather congested A.E.C. works road on to the fuelling point was a slow and arm-testing business.

Excellent Gearchange

Otherwise, controls were unusually light for so heavy a vehicle, the gearchange being particularly convenient and easy to use. This is achieved by the design of the sliding dogs used to engage the constant-mesh gears, which automatically checks any tendency for the gear to disengage and avoids the necessity to use strong selector springs. Using conventional double-declutching, smooth changes could be made with little delay for engine synchronisation and full depression of the clutch pedal brought the clutch brake into action to make clean straight-through up-changes possible when desirable on gradients. The six main gears gave a useful spread for normal open-road running, in which, thanks to good engine torque, much useful work could be done in overdrive.

But at this weight, gradients took their toll and on long gradients, for example on the Guildford By-pass up to the Hog's Back crossing and the approaches to the Devil's Punch Bowl, advantages could possibly have been gained both in speed and fuel consumption with a greater number of more closely spaced usable ratios. Although the auxiliary gearchange on the Mammoth is as easy to use on the move as the main gearbox, it is controlled by a separate lever and split gearchanges are not possible without vitiating loss of vehicle momentum. In any case, the auxiliary low ratios are generally only fractionally different from those provided one main gear lower in auxiliary direct drive. Nevertheless, the Mammoth provides a usable range of seven progressive ratios (making one auxiliary change at one end of the sequence through the main gearbox), which is more than some vehicles in this class provide and as much as most customers are prepared to pay for.

Outstanding Brakes

Quite remarkable results were obtained in brake performance tests, without any of the delay effects once associated with air-pressure operation. The tractor system employs a dual brake valve and two

air reservoirs with two independent air circuits. Individual diaphragms actuate the front brakes, while two large-bore piston-type cylinders operate the bogie brakes through push-and-pull rods. The tractor brakes provide a total lining area of 1,054 sq. in. and the four trailer brakes, which are also air operated through a two-line coupling with the tractor, add a further 844 sq. in., giving the high specific area of about 48 sq. in. per ton of gross weight.

With our chalk-firing magazine coupled, the average measured stopping distance from a recorded 30 m.p.h. on dry tarmac was 51 ft.—here indeed was a vehicle that could literally be stopped in its own length. A fade test was conducted on the long descent from the Devil's Punch Bowl towards Godalming. A rich smell of cooking resin was developed by descending for about 1½ miles in overdrive with the brakes applied to keep the speed down to about 15 m.p.h. Two full applications from about 30 m.p.h. thereafter produced Tapley meter readings of 67 and 65 per cent, precisely the same as those obtained earlier with cold brakes, and made even markings on the surface from all wheels. Provided brakes are maintained in this condition in service, there appears little need for the optional exhaust brake offered when an adequately braked trailer is used, except perhaps to economise in lining renewals in operation in very hilly districts.

Fuel Consumption

Fuel consumption checks, made by using a metered test tank over a 14-mile section of A3 and also by filling the main tanks at the beginning and end of the day's run, indicated a moderate thirst which, on the open road, gave a best gross tonnes/miles per gallon figure of 284 and, overall for a run of 90 miles, a figure of 209. For reasons of test-tank capacity, two separate runs of seven miles each were made on fairly undulating road necessitating occasional use of the lower gears. In the first, a return of 7.2 m.p.g. at an average speed of 30 m.p.h. probably represented about the best result likely in average loaded trunk road operation. A second run, in which there were several checks and one complete halt for traffic as well as a short gradient that required the use of third gear for several hundred yards, produced a result of 6 m.p.g. at 27 m.p.h. average speed.

The overall figure was surprisingly favourable, providing confirmation of the flexibility of the A.E.C. 11.3-litre diesel engine and the excellent matching of gear ratios to the engine characteristics. The total distance covered was 90 miles over a by no means flat course; it included about 20 miles of suburban traffic and numerous stops in the braking and acceleration tests and the fuel consumption worked out at 5.3 m.p.g. This seems to be a fair example of what the vehicle will do in not-so-open conditions at 40 tons gross. With the two 36-gal. fuel tanks it gives the vehicle the useful loaded range of about 400 miles.

RAPID TRANSIT

(Continued from page 3)

Hounslow in the 11-mile length and a Kearney tube train could cover such a journey at an average of 55 m.p.h. or in 12 min. The cost of double track tunnelling would be about £2 million a mile, to which must be added the cost of the shallow stations.

The system could also be adapted to an elevated or combined elevated and surface route approximating to the proposed Cromwell Road airport "monorail" (actually suspended from pneumatic-tyred trucks) or the Victoria-Barnes-Feltham approach to the airport that would be used by the proposed standard railway. In each case the limit of speed could be designed at a level over 125 m.p.h. and by use of resilient wheels and roller bearings extremely quiet operation, equal to that of pneumatic-tyred vehicles, could be achieved. The journey time could thus be, say, 10 or 12 min. from Victoria.

One feature of single-carrying rail vehicles, enhanced, of course, by modern roller-bearing designs, is the extremely low rolling resistance experienced, which thus brings current consumption on level tangent runs below comparable orthodox vehicles. At high speeds a mild degree of streamlining on the leading and tail vehicles assists the reduction of head air resistance. The streamlining would be modified at the inner or coupled ends of cars to prevent setting up air resistance from eddies between the cars. The narrowness of the monorail bogie contributes to low air resistance.

Rolling Stock

The rolling stock for urban use is designed with transverse seats and side doors between each pair of seats—something Mr. Chalmers Kearney advocated long before it was adopted for quick exchange of passengers on Southern suburban trains. Some additional speed of operation and additional security are obtained from power-operated jackknife doors, while use of platforms on each side of a train at stations enables one to be used for alighting and the other for boarding passengers, as has become standard practice on recent stations of the Barcelona Metropolitano.

Any suitable electrical system can be used, but overhead wires and collection from a miniature pantograph would be convenient. The full-size car illustrated was built by Brush and had standard d.c. traction motors driving through silent chains; a neater arrangement subsequently evolved is the motor wheel. In this the wheel is a resilient one so that the motor weight is spring-borne and the riding characteristics of the coach are further enhanced. The latest design of car provides for fully rubberised suspension with compressed-air actuation of the vertical columns. All equipment, needless to say, is designed to fail on the safety side. It would appear that there is here provided a potential means of airport access and of the solution of other urban and interurban transport problems that justifies closer investigation than it has hitherto received.

PUBLICATIONS RECEIVED

ENEMIES OF TIMBER. The new edition of this extremely interesting booklet published by Cuprinol, Limited, Terminal House, Grosvenor Gardens, London, S.W.1, has been revised and completely rewritten by Claude Sisley, F.R.E.S. By facilitating early and accurate recognition of dry rot and insect attacks in timber and suggesting means of treating and preventing such attacks, *The Enemies of Timber*, which costs 2s. 6d. and can be obtained from Cuprinol, Limited, will prove invaluable to everyone concerned with timber in construction and use.

OUR NATIONAL HERITAGE. Volume 5 of this beautifully produced and popular series published by National Benzole Co. Limited, Wellington House, Buckingham Gate, London, S.W.1, takes for its theme Britain's heritage of poetry and relates quotations from the works of our national poets with scenes associated with their lives. Each picture is accompanied by a small map and identified with a map reference from a new National Benzole series of road maps.

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PILGRIMS TO LOURDES

Achievement in Planning by Aer Lingus

WORK OF THE IRISH AIRLINE

ONE of the happiest things about Aer Lingus has always been its ability to display what can, perhaps, best be described as human, almost homely, touch. When, a few days over a year ago, it celebrated its twenty-first birthday large and very tasty cakes were flown to all the outstations served and passengers on aircraft were also given pieces of cake to mark the occasion. The airline was moreover among the first to make a regular practice of meetings between its officers and the staff where results were reported and plans for the future were explained. A staff suggestions scheme is, of course, by no means unique, but the results which this airline has obtained seem rather more worthwhile than most. Nor has it been the aim merely to secure the loyal backing of the staff alone. Hard

opened. Aer Lingus began a regular service in the summer of 1954 and has built up on that foundation ever since by extending the route to Barcelona and, incidentally, creating a substantial traffic on that sector and also by a considerable number of charter flights. Last year it was possible to introduce Viscounts on the regular service and the increase in speed, compared with the DC3s and Bristol 170s which had been used previously, added to the attraction of the service, apart from eliminating the need to call intermediately for refuelling.

Lourdes Centenary

Since 1958 is the Lourdes Centenary Year it was necessary to plan very carefully to be able to handle the traffic that might be expected. As



An Aer Lingus Vickers Viscount 808 on the Dublin—Lourdes—Rome service at Tarbes Airport, Lourdes

work has been done with the aim of increasing Irish appreciation of air transport and, particularly, the efficiency and comprehensiveness of the facilities provided by the national airline. The educational work carried out through its parent Aer Rianta has been described in MODERN TRANSPORT, as indeed has much of the development of this relatively small but go-ahead operator, and it seems, therefore, most appropriate in the week before the Institute of Transport congress in Dublin, when the programme includes a visit to the Dublin airport at Collinstown, to refer to the two major developments of the year and to some future prospects.

Planning for both the major happenings goes back some way and, indeed, in the case of the transatlantic service opened by Aerlinte Eireann

the sector length from Dublin to Lourdes is over 760 miles it will be obvious that considerable ingenuity is required if the best use is to be made of available capacity in both directions, while taking advantage of the economic suitability of the Viscount for such a hop. An accompanying table sets out the traffic figures to and from Lourdes which Aer Lingus expects to carry this year. For the first three months they are actual, for May they are based largely on actuality and for the remaining months they must, obviously, be estimates to some extent, although the high proportion of passengers on charter flights and inclusive tours makes it possible to forecast with considerable accuracy.

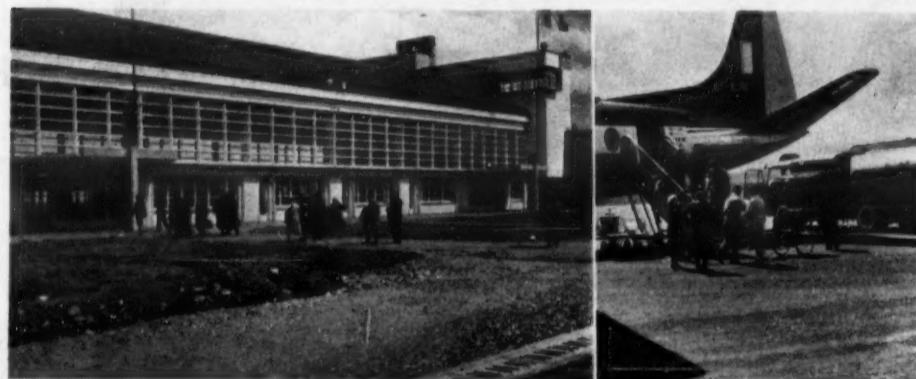
The opening ceremonies of the centenary year took place on February 11 and for these more

LOURDES TRAFFIC, 1958: REVENUE PASSENGERS

Date	Scheduled services	Ireland	Charter flights	Other	Inclusive tours	Lourdes—Barcelona	Lourdes—Rome	Total
February	—	809	—	—	—	—	—	809
March	92	412	—	—	—	—	24	528
April	760	5,341	905	—	117	309	204	7,636
May	948	1,038	795	—	576	300	250	4,509
June	1,750	1,500	250	—	800	550	400	5,250
July	2,300	1,600	1,200	—	1,210	700	425	7,435
August	2,500	1,600	550	—	1,210	550	350	6,700
September	2,350	3,250	600	—	910	500	350	7,900
October	1,750	850	100	—	175	400	350	3,625
November	50	—	—	—	—	10	—	60
TOTAL	12,500	17,000	4,400	—	5,000	3,319	2,353	44,572

at the end of April, for some 10 years. The various adventures of this proposal according to the government then in office in Ireland are really a matter of history now that the service has actually begun. It is operated by Lockheed Super-Constellations of Seaboard and Western Airlines and, as recorded in our last issue, the American concern has now agreed to subscribe 26 per cent of the capital of Aerlinte Eireann, which, like Aer Lingus, is a subsidiary of Aer Rianta. The capital will then amount to £1,925,000. It will be recalled that all passenger accommodation is of the newly introduced economy category and that the frequency which commenced as thrice-weekly becomes daily as from today (June 1). Aircraft operate between Dublin and New York via Shannon, the Dublin—

than 100 Irish pilgrims flew in two Viscounts to Lourdes. They were the first of some 21,500 who will have travelled to Lourdes in 165 pilgrimage groups by the end of October. It may be added that 26 of these groups will number, or have numbered, more than 100 and reference should be made in particular to the operations on April 9 and 10. On those days 999 members of the pilgrimage organised by the Boy Scouts of Ireland and 64 pilgrims from Roman Catholic diocese of Edinburgh were carried to Lourdes, while 752 members of earlier pilgrimages were brought back therefrom. This represented almost 1,400,000 charter passenger miles on one route in two days without any disruption of normal passenger services despite their being at a higher level than normal to meet the aftermath of the



The new terminal building at Tarbes and, right, a passenger from Rome for whom the invalid chair is waiting down the steps from the aircraft

Shannon sector being flown under charter to Aer Lingus, and it is hoped to introduce a Boston call on certain flights to tap the strong Irish interests in that city.

Pilgrimage Demands

With the large number of Americans of Irish descent there is obvious scope for cashing in on their sympathies, although the management is too realistic to think that this is, by any means, all that is needed. Care has, moreover, been taken to time the transatlantic service to afford good connections at Dublin with the various Continental services which Aer Lingus has developed, some of them within the last fourteen months. Another factor to be taken into account is the particularly suitable facilities for those anxious to visit Roman Catholic places of pilgrimage. Aer Lingus provides two routes from Dublin to Rome, that started last year via Manchester and Zurich and another, begun this March, which operates via Lourdes, itself, of course, a great pilgrim centre.

It would not be unfair to say that the Irish airline has been responsible to a considerable extent for the growth of air traffic at Tarbes Airport where this year a new terminal building has been

Easter holiday traffic. On the London route alone 860 revenue passengers were carried on 18 Viscount flights, the same type operated five flights on the Continental services and the movement of the Edinburgh pilgrimage occupied two DC3s for most of April 9. Over the two days Aer Lingus operated 63 scheduled flights and carried nearly 2,000 passengers.

As the table is set out in terms of passengers it is as well to place on record the fact that A.L.T. expects to operate 428 scheduled flights from Dublin, of which 154 will terminate at Lourdes, 168 continue to Barcelona and 106 to Rome. It is also planned to operate 100 inclusive tour charter flights and 576 pilgrimage charters; most will be flown with Viscounts. To handle the traffic at Lourdes the airline has moved its district manager, Paris, Mr. D. Brennan, there for the summer together with another member of the Paris staff. There are also four engineers and, at peak periods, an operations officer and a radio inspector. It would not have been easy to cope with the traffic in the old building at Tarbes Airport, but there is much more space in the new.

The terminal building at Dublin has tended in recent years to be too small for its traffic in the (Continued on page 14)

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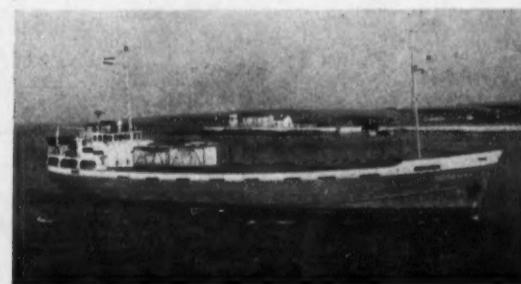
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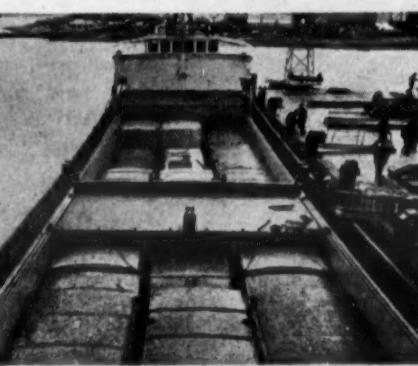
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Western Avenue Underpass

A. E. Farr, Limited, has been awarded a £761,000 contract for the underpass to carry Western Avenue under Hanger Lane, North Ealing. A diagram of the new road layout at this busy intersection appeared in our February 15 issue.

Railway Workshops Wage Claim Renewed

Unions representing railway engineering workers are to make a new approach to the B.T.C. in respect of their previously rejected claim for a substantial wage increase. This not unexpected development has been caused by the wage award to operating grades.

Export Rail Service to Hull

From June 9, the Eastern Region is to extend its export express freight service to cover traffic from Sheffield and Rotherham to the ports of Hull and Goole. The new service will run daily from Mondays to Fridays inclusive and give an assured arrival at the port on the morning following the day of dispatch.

Car Vans on East African Railways

A scheme whereby railway passengers may take their car with them in vans on the same train has been expanded to include all depot stations on the Mombasa-Kampala main line of East African Railways. Passengers travelling between any of the stations, Mombasa, Nairobi, Nakuru, Eldoret, Tororo, Jinja and Kampala, on principal first- and second-class trains can use the facility.

The London-Birmingham Route

Work will start shortly on the second section of the St. Albans By-pass, which forms the southern end of the London-Birmingham motorway. This section, nearly five miles long, is expected to be finished by the end of next year. The by-pass is in the form of an inverted Y and the second section consists of the western leg, leaving the first section at Beech Tree, a point due west of St. Albans near the A414 crossing, and joining the Watford By-pass near Aldenham (MODERN TRANSPORT, December 10, 1955).

U.S. Truck Drivers' Pensions

Retirement pensions of a large number of American truck drivers have been increased as a result of contracts negotiated recently by the U.S. International Brotherhood of Teamsters. Under the new arrangements a driver retiring at the age of 60 can get \$135 (£48) per month instead of \$90. At the age of 65 when he qualifies for social security benefits, he can expect \$75 (£27) (formerly \$22.50). To qualify for a pension, the worker must be employed in the industry for 20 years and he retains his pension rights even if in that time he moves from job to job within the industry. The increases in the pensions are made possible by increased employer contributions to the pension fund. Some 4,000 trucking firms within the 25 states covered by the contracts pay into the fund. Only 500 workers are receiving pensions at the moment but another 3,300 are due to retire in four years' time.

Canadian National Railways Loss

The Canadian National Railways sustained a loss in 1957 of \$29,600,000, the first loss in four years and the largest since 1949. Canadian National Steamships had a deficit in 1957 of \$648,000, compared with a \$23,000 surplus in 1956.

More N.E.R. Diesel Services

Passenger train service between Cudworth and Barnsley Court House on the North Eastern Region will be withdrawn as from June 9. An hourly diesel service was introduced in March between Leeds City and Barnsley Exchange Stations, via Normanton and Wakefield, and this provides an improved service for Barnsley passengers to the North who previously travelled via Cudworth.

Rees Jeffreys Studentship

The 71st annual report of the Roads Improvement Association records that a Rees Jeffreys studentship, value £500 for one year, is now available at the London School of Economics, from the registrar of which (at Houghton Street, London, W.C.2) particulars and application forms may be obtained. The school year commences in October. The suitable candidate will be able to devote at least one year's study at the L.S.E.

New Ferry By-pass

Tenders have been invited by the Ministry of Transport for the construction of a by-pass at New Ferry on the Birmingham-Birkenhead trunk road, A41, which carries a large volume of traffic between Merseyside and the Midlands. Estimated to cost about £300,000, the new road, with twin 24-ft. wide carriageways, will run east of the centre of New Ferry from the Birkenhead boundary and will rejoin A41 in a roundabout some three-quarters of a mile to the south.

Docks and Waterways Charges Schemes

The Transport Tribunal has confirmed the British Transport Commission (Harbours) Charges Scheme, 1958, and the British Transport Commission (Inland Waterways) Charges Scheme, 1958. Both come into force on June 1. The Tribunal held public inquiries into the schemes last March. The harbours scheme generally provides for the maximum charges to be levied and the waterways scheme lays down that all charges shall be reasonable.

Manx Electric Railway Plan

After a full day of debate, Tynwald, the Manx Parliament, on May 22 settled the fate of the Manx Electric Railway acquired by the Island Government in 1956. By one vote it decided to continue the railway on the lines of a new proposal put forward by the Railway Board. It had earlier refused to adopt financial proposals involving £55,000 in the current year, £45,000 next year, and £34,000 annually until 1973. Sir Ralph Stevenson, chairman of the Railway Board, indicated that the alternative scheme would mean closing the line to passenger traffic in the winter, and operating it only as a scenic railway in the summer months for the use of holidaymakers.



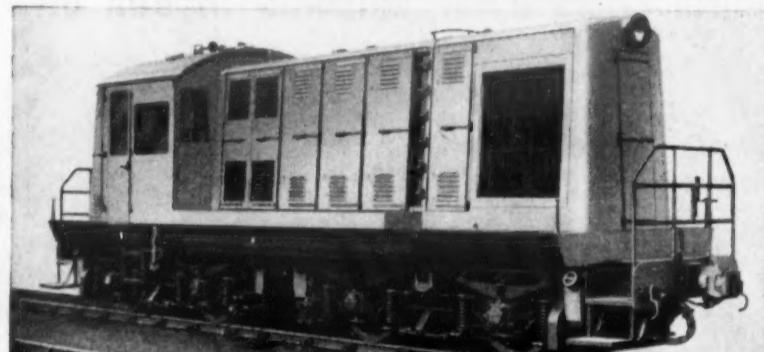
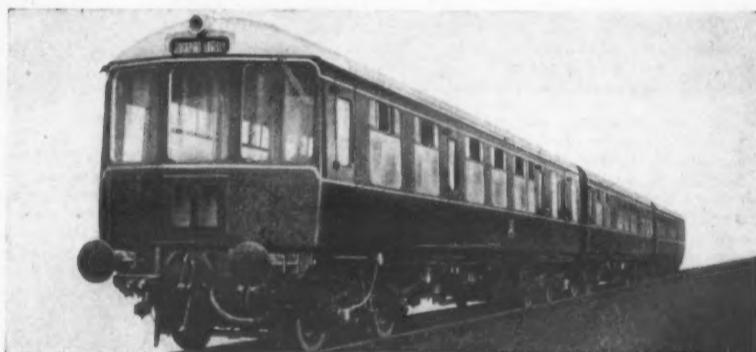
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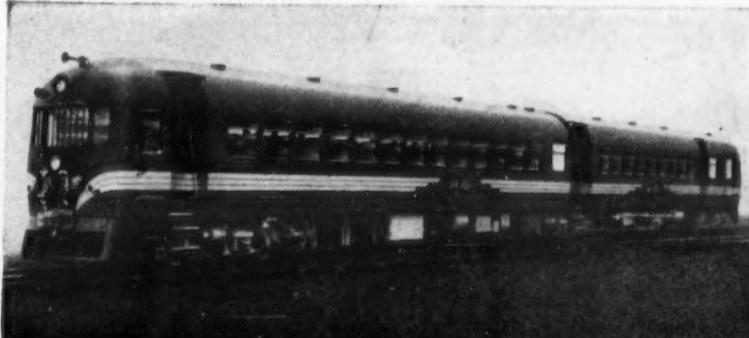
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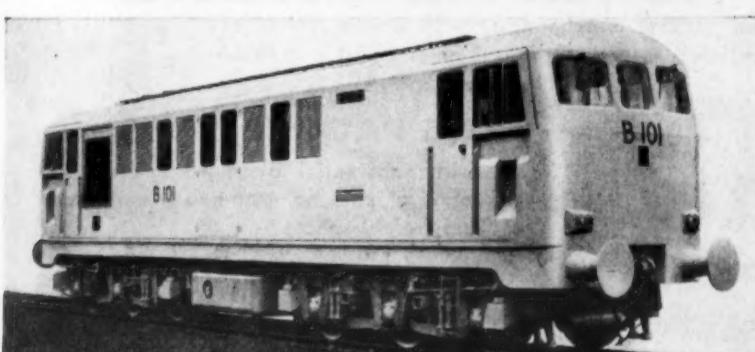
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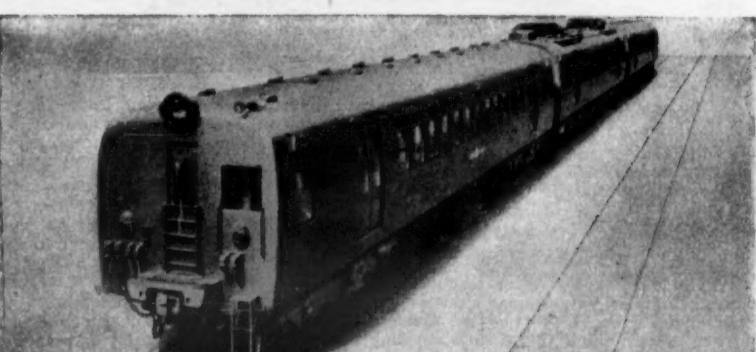
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COMMERCIAL AVIATION
Sabena to Moscow

B.O.A.C. OVER ATLANTIC

ON Monday, June 2, Sabena will inaugurate a new direct service with Douglas DC7C aircraft between Brussels and Moscow with immediate connections by Sabena to and from the United Kingdom. This service will operate once a week until July 31, and thereafter twice weekly. The Soviet airline Aeroflot, for which Sabena is the general representative in Belgium, will, for its part, operate a regular weekly Moscow—Brussels service, and in addition a series of supplementary flights on certain dates during the summer months. The Sabena and Aeroflot services will provide direct connections from Moscow for Peking and other Far Eastern destinations.

Brussels Exhibition Heliport

Within a fortnight of the opening of the Brussels 1958 Exhibition, no fewer than 2,240 persons had used the heliport in the exhibition grounds. These included passengers who flew in direct by the helicopter services from Rotterdam, Eindhoven, Duisburg, Dortmund, Maastricht, Cologne, Bonn, Lille and Paris; others who had changed into a helicopter at Melsbroek Airport, where they had arrived by one of the regular fixed-wing flights; and others who had come to the heliport for one of the sightseeing flights over the exhibition grounds.

More B.E.A. Routes Served by Viscounts

British European Airways this month has placed Viscount 800s on three more routes instead of piston-engined aircraft. On May 16 they began operating four flights a week between London and Dinard; from June 1, it will be a daily service. The 70-min. flying time is 45 min. less than that of the Pionair (Douglas Dakota) aircraft hitherto operated while the Viscount seats nearly twice as many passengers as the 32-seat Pionair. Earlier in the week, Viscount 800s took over from Elizabethan air liners on the London—Bordeaux and London—Biarritz routes, saving 25 and 45 min. respectively.

B.O.A.C. Build-up of Atlantic Services

The build-up of transatlantic services of the British Overseas Airways Corporation to their full summer peak was completed during the week which began on May 19. There are now 44 weekly in each direction between Britain and North America, in addition to three each way between Britain and the Caribbean. There have been adjustments to the DC7C services and the most important increase was that on the Chicago route operated by Britannia 312s where, as previously foreshadowed in MODERN TRANSPORT, there is now a daily service via Montreal and Detroit.

K.L.M. Report for 1957

Satisfactory all-round increases in traffic revenue during 1957 are noted by K.L.M. (Royal Dutch Airlines) in its annual report. Income from all sources amounted to Dfl 467 million, an increase of 15 per cent over 1956, but the influence of rising costs resulted in the profit remaining at approximately last year's level of Dfl 22.8 million as against Dfl 23 million for 1956. The K.L.M. board of management has declared its intention of taking various measures to maintain the profitability margin; a most exhaustive study is to be undertaken with a view to reducing the cost level. Traffic results continued to show progress. Passenger traffic in ton-km. increased by 14 per cent, freight by 9 per cent and mail by 6 per cent, while 913,000 passengers were carried in 1957 as against 822,000 in 1956, 24,992 kg. of freight (23,739,000 kg.) and 2,919,000 kg. of mail (2,630,000 kg.). The average distance flown per passenger was 2,320 km. Dfl 53 million was charged to the profit and loss account for normal and additional depreciation, as against Dfl 43 million last year.

Viscount 810 Obtains Certificate

The Vickers Viscount 810 has been awarded British and United States certificates of airworthiness and is entering scheduled service. The new aircraft, which first flew late in December, has been certificated at design weights above those on which the original contract specification were based. Its maximum take-off weight is 69,000 lb., compared with 67,500 lb. in the original specification; the maximum landing weight of 62,000 lb. is 2,000 lb. higher than the original figure; and the zero fuel weight of 55,500 lb. represents an increase of 1,000 lb. These improved weights permit the Viscount 810 to be furnished and equipped to a very high standard without detriment to the payload, on which the economics of the aircraft are founded. Continental Airlines of Denver, Colorado, will be the first operator of the Viscount 810. Two of its fleet of 15 Viscounts have recently been delivered to Denver and inauguration of the airline's Viscount service on the Chicago—Kansas City—Denver—Los Angeles route was scheduled for May 27. Other Viscount V810 purchasers include: Lufthansa, Pakistan International Air Lines, South African Airways, VASP of Brazil, and Cubana.

B.O.A.C. Comet Training Programme

Following its recent series of transatlantic training flights between London and Gander (Newfoundland) with the de Havilland Comet IIE jetliner, the British Overseas Airways Corporation is now to extend the training programme with operations from Gander over the Maritimes and the New York area. For the next month local flights from Gander with the Comet IIE will consist of familiarisation training over the Maritime aerodromes at Moncton (New Brunswick), Sydney (Nova Scotia), Goose Bay (Labrador) and Stephenville (Newfoundland). Two training flights will leave London Airport for Gander each week to carry out this programme. From about June 20 onwards the local flights from Gander will compromise familiarisation training in the New York area. This will include instrument letdowns and low overshoots at the airports of Idlewild and Boston and on some flights landings will be made at Baltimore and at Montreal. The first flight in this new programme left London Airport on May 22. B.O.A.C. is studying the possibility of introducing Comet IV's on scheduled service between London and New York in the latter part of this year and the Comet IIE flights form part of the preparation for such an operation should it be adopted. Some extremely fast Atlantic crossings from Gander to London have recently been made with the B.O.A.C. Comet IIE. The fastest flight between these two points, a distance of 2,400 miles, was made on May 15 when the time was 4 hr. 21 min.

INSTITUTE OF TRANSPORT IRISH CONGRESS



Courtney

Mr. T. C. COURTNEY, M.E., M.I.C.E.I.
M.I.C.E., M.Inst.T.

* * * * *

Author of one of the two papers to be read at the congress of the Institute of Transport in Dublin next week (the other is Sir Brian Robertson, whose portrait and biography appeared in our last issue), Mr. Thaddeus Cornelius Courtney, M.E., is chairman of Coras Iompair Eireann, one of the principal host undertakings for the organisation of Institute members' visits in Ireland. He was born at Cork in 1894 and educated at the North Monastery and Presentation Brothers College, and University College, Cork, where he took his B.E. (Civil) with first-class honours in 1916. Later that year he was appointed assistant in the office of the chief engineer, Cork, Bandon and South Coast Railway, and in 1917 joined Henry Ford and Son in connection with the building of the Ford assembly plant at Cork. With them he remained, except for a period on the construction of a new Harland and Wolff shipbuilding yard in Belfast, until he joined the Irish Army in 1922. Holding the rank of major, he was largely responsible for the organisation of the Corps of Engineers. In 1925 Mr. Courtney transferred to the Department of Local Government as engineering inspector and five years later was appointed county surveyor for Tipperary (North Riding). In 1934 he became Chief Engineering Advisor to the Department of Local Government, and for a decade to 1949 he also served as Railway Inspecting Officer to the Department of Industry and Commerce. During that period he conducted a number of inquiries on behalf of the Government of Eire and served on various committees of inquiry. During the 1939-45 war he had much to do with campaigns for the production of turf fuel, for the use of which C.I.E. has, since he assumed the chairmanship in 1949, carried out much research, with the result that an unconventional locomotive of considerable merit has now been evolved by its chief mechanical engineer, Mr. O. V. S. Bulleid. The paper to be presented by Mr. Courtney to the Institute members will, however, deal with a still more spectacular change on the Irish railways in which a clear lead was shown to this country, since his subject will be the changeover to diesel traction on the C.I.E. system.

IN PARLIAMENT

Railway Economy Drive

TRAIN MILEAGE CUTS

QUESTIONS relating to the railway wage settlement and its impact on the finances of the B.T.C. and its charges were answered by the Minister of Transport at question time on Wednesday last week. MR. H. WATKINSON said that the Commission intended to meet by far the greater part of the cost of the wage awards by reductions in working expenses. It does not propose to make any general increase in fares or charges but it will continue to adjust freight rates for selected traffics within its existing charging powers. It also intends to apply to the Transport Tribunal for fresh powers which are necessary if it is to be able to make limited increases on certain passenger services from time to time.

On the revised capital investment programme, he said that the Government was prepared to authorise additional investment in railway modernisation of £25 million for the two years 1958 and 1959. This will make the total investment for the two years about £15 million more than the original estimates made by the Commission before the investment cuts were made, but less than the totals forecast in the regional budgets produced subsequently. There has been no change in the date forecast for the completion of the modernisation plan.

MR. G. R. STRAUSS asked what economies had been agreed between him and the B.T.C. chairman preceding the wage award. The Minister said the general steps were set out in the chairman's letter of May 2. These measures were put in hand on May 1 and have since been intensified. They will result in heavy cuts in services and thus reductions in manpower. For example, cuts in train mileage, including the withdrawal of services on main-line routes, will become effective on June 30 in the Western Region which plans to save nearly 100,000 train-miles in total weekly. The London Midland Region has already made a reduction of 600 trains a week and will make further economies by June 30.

Thirty-two proposals from various regions to close unremunerative services would very shortly come before area Transport Users' Consultative Committees. He was seeing the chairman of the Central Transport Consultative Committee that afternoon. Withdrawal of the Newhaven-Dieppe passenger ferry steamer service during winter months, and of the Southampton-Le Havre service, was also under discussion. Obsolete freight wagons were being withdrawn at the rate of 3,000 a week.

London No-Waiting Regulations

In a motion praying against the London (Waiting and Loading) (Restriction) Regulations, 1958, which came into effect on June 1, MR. ERNEST DAVIES said they were complex and inconsistent in the sense that hours of restriction varied from area to area, and they would not be easy to observe. He wanted more uniformity in the restricted hours and at the same time, a campaign to educate road users into obeying the regulations. At the same time he thought these additional no-waiting restrictions should be initially introduced experimentally for a period of six months.

The regulations extend the present restriction in the "yellow band area," at present applied between 11.30 a.m. and 6 p.m. to 8.30 a.m.-6.30 p.m. on Saturday as well as Monday-Friday; 750 sections of road are affected. In the theatre area of the West End the restriction will extend to 10 p.m., in the Soho area day and night continuously and in the City of London from 9 a.m. to 6.30 p.m. Monday-Friday. In the suburbs the restrictions would, said Mr. Davies, apply roughly at peak periods only. The term "no-waiting" was a euphemism because loading and unloading of vehicles was still permitted, usually for 20 minutes, up to 11 a.m. This, he said, to some extent defeated the object of a no-waiting street. He wanted to know what steps the Minister of Transport was taking to obtain the additional information about the effect of a total ban on waiting as suggested by the recent finding of the London and Home Counties Traffic Advisory Committee.

MR. G. R. H. Nugent, Joint Parliamentary Secretary, Ministry of Transport, said the regulations were intended to consolidate 28 years of statutory control over waiting in London streets and they followed Parliamentary approval of parking meters. It was then quite clear that a general review of waiting restrictions throughout London was more than due. The Commissioner of Police assured him that the new regulations offered better prospect of enforcement. There was an innovation in the regulations, the streets in which waiting was prohibited between 8.30 a.m. and 11 a.m. and between 4.30 p.m. and 6.30 p.m., leaving the middle of the day free. That was a suitable arrangement for some areas where there was not much traffic flow at that period of the day. The Minister would be prepared to consider modifications to the restrictions after a period of 12 months.

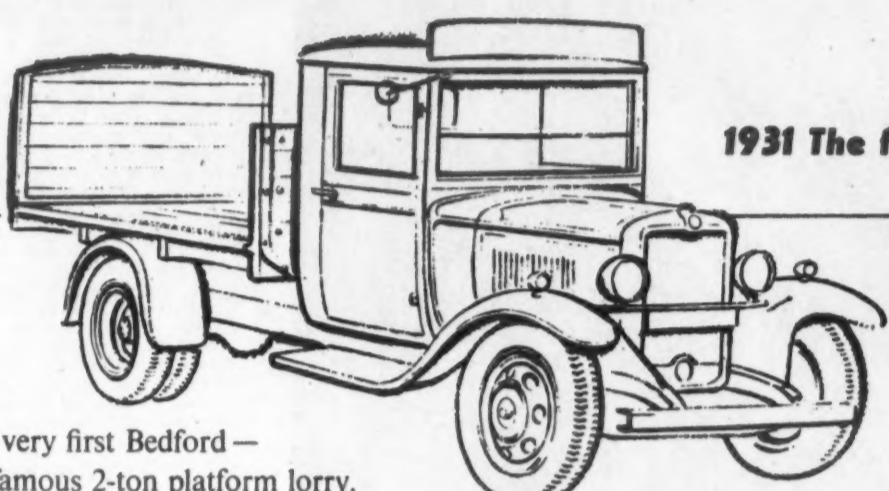
Unloading Ban: Review After a Year

With regard to the total ban on waiting, including loading and unloading, that had been proposed for certain areas, the objections to these loading bans, said Mr. Nugent, were very strong. The Minister had accepted the recommendation that he should see how these new waiting restrictions, starting at 8.30 a.m.—and therefore three hours earlier—worked out in helping traffic flow, before considering whether or not there should be a complete prohibition of loading and unloading at these busy sites in the interests of traffic flow. In the course of the next 12 months, or a little later, they would definitely have to consider the matter again and try to get the right balance in this continuous conflict between facilitating traffic flow on the one hand and providing, on the other, for the needs of the shopper who wanted to stop and the trader who must stop his van to load and unload if he was to carry on his business at all.

As a result of various incidents involving aircraft engaged on oil company work in Libya, particularly in the remote desert regions, the Director of Civil Aviation, Libya, has granted to International Aeradio, Limited, the exclusive right to provide a flight supervisory service (operational control) for all oil company and associated charter aircraft operating within the territory. I.A.L. is establishing the flight supervisory centre at Tripoli which will be linked with 58 landing-strips in Libya directly or by relay through a radio centre at Bengasi.

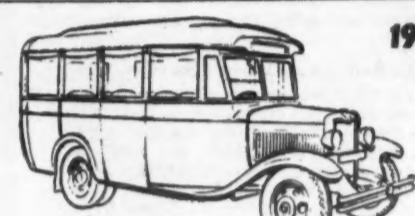
May 28th, 1958... the

Famous Bedfords from 1931 to 1958



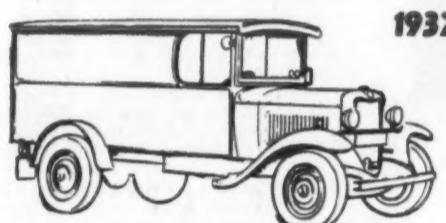
1931 The first Bedford

The very first Bedford —
the famous 2-ton platform lorry.



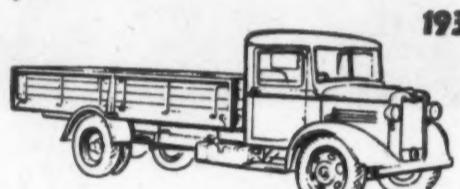
1931

The very first Bedford coach with a seating capacity for 14 passengers.



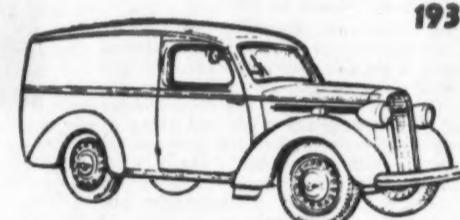
1932

The first Bedford 30 cwt. van.



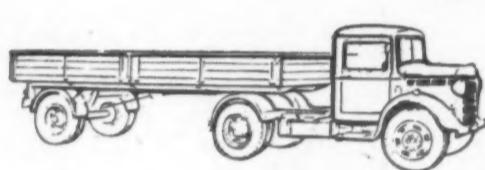
1934

The original Bedford 3-ton lorry — first 30 m.p.h. speed limit 3-tonner.



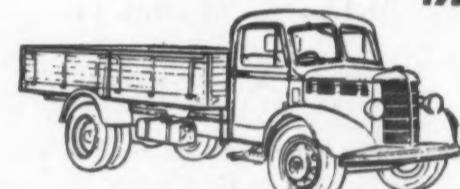
1938

The first Bedford Light Van 5/6 cwt. model.



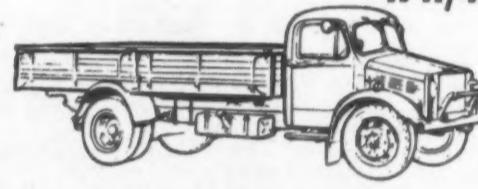
1938

The first Bedford Scammell articulated model.



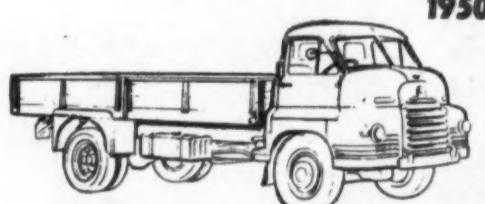
1939

The first Bedford 5-ton lorry.



1941/45

The Bedford 5-tonner with its wartime square front and radiator.



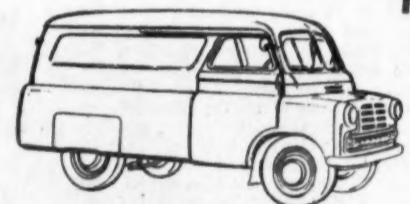
1950

The first Bedford 7-tonner.



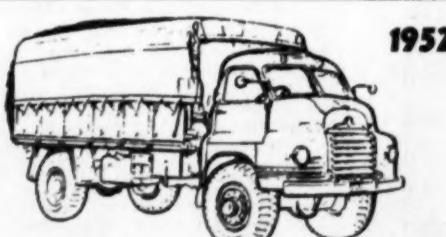
1950

The first Big Bedford coach.



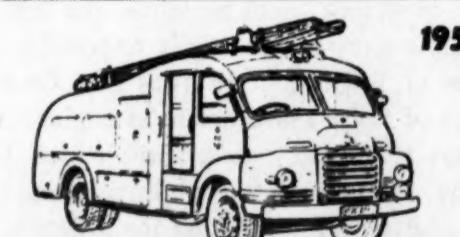
1951

The first Bedford 10/12 cwt. van.



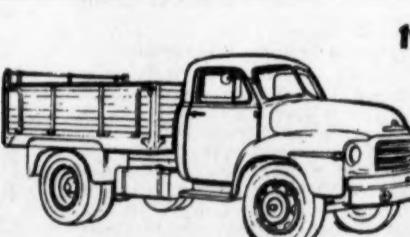
1952

The first Bedford 4-wheel drive model R (successor to the wartime QL).



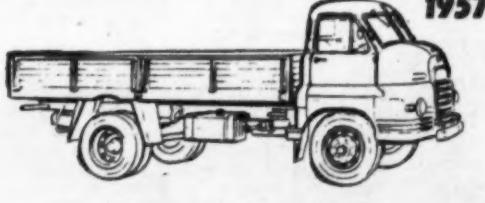
1952

The first Big Bedford model SH fire tender.



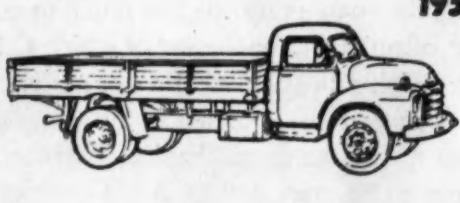
1953

The first Bedford TA series 5-ton tipper.



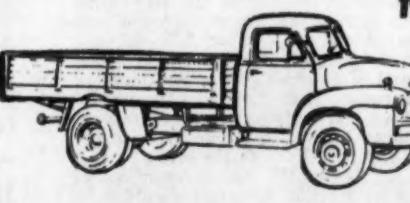
1957

The first Bedford 6-ton lorry powered by Bedford's own diesel.



1957

The first Bedford 5-ton lorry powered by Bedford's own diesel.



1957

September — The first Bedford 3-tonner powered by Bedford's own diesel.

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of British transport**

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SI MONUMENTUM REQUIRIS, CIRCUMSPICE

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for ease of operation and rugged, extra heavy duty work . . . an outstanding truck carrying ahead the Bedford reputation of better value for money than any other truck in its class.

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Why not find out how Bedford can help *you*? Your local Bedford dealer will gladly give you full details.

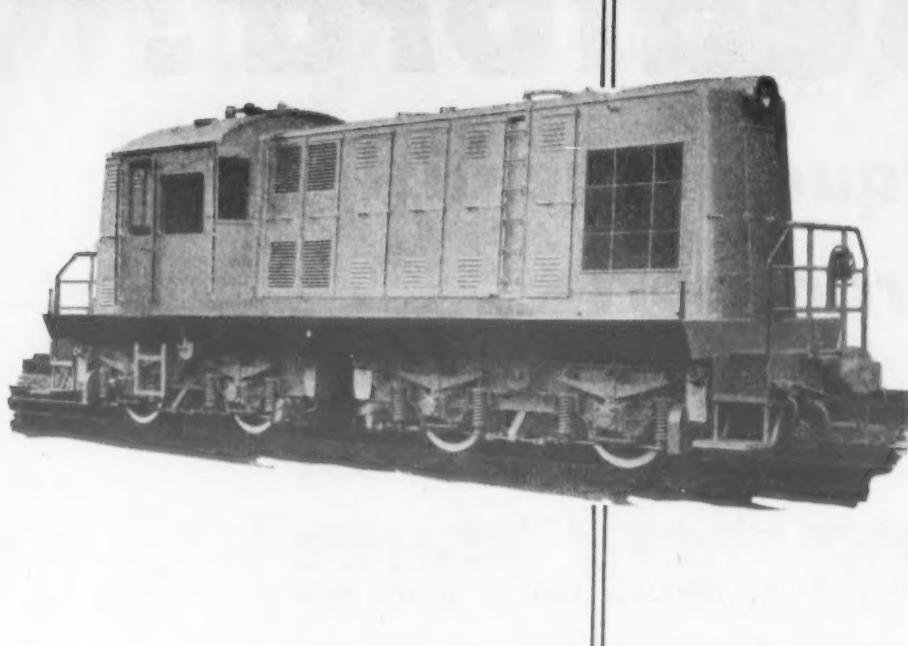
1958 The Millionth Bedford



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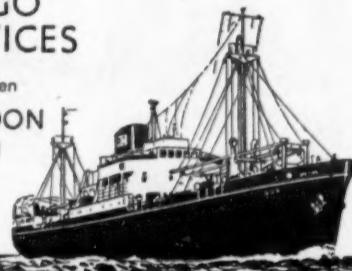
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5—Folkestone*

By HENRY REES, Ph.D., M.Sc.(Econ.)

WHILE Dover is encircled by the rolling chalk

Hills of the North Downs, Folkestone lies at the outlet of a broad valley carved from the softer sands and sandstones of the Upper Greensand, and sees the steep scarp of the chalk rising to 500 ft. a mile away to the north. Folkestone, too, has its cliffs—natural to the north-east in the Warren; tamed to the south-west in the Leas, where sunny promenades and zig-zag paths please the visitor—but the cliffs of Folkestone are lower than those of Dover and are of clay rather than chalk. The geologist knows this district well, for in these cliffs he sees the type section of the English gault clay, rich in fossils, where 11 separate zones may be recognised from their ammonites. To the railway engineer Folkestone Warren is notorious as one of the few places in the country where for three miles along the shore landslips are likely; it seems that the unsupported gault clay is insufficiently stable to withstand the great weight of the chalk which here presses down upon it.

The locality was known to the Romans, for a large villa (excavated in 1924) was built on East Cliff. It commanded a sweeping view over the Channel, and with its 53 rooms, its central heating and fine suite of baths we are almost reminded of a modern hotel. While the name of the town—Folkestone in a Saxon charter of 696 and Fulchestan in the Domesday Book—signifies "Folca's Stone," the settlement grew around a Saxon nunnery which King Eadbald of Kent established for his daughter Eanswith in A.D. 630. A tiny stream reached the sea nearby and its mouth provided a suitable haven, so that a small town of

Folkestone, though its land approaches were more difficult.

Telford's harbour, since twice enlarged, now accommodates the local boats in the fishing trade, while the Continental traffic is handled at a deep-water pier, where the railway (as in all the cross-Channel ports) joins hands with the steamer. On its way the railway traverses the rectangular harbour by a viaduct and swing bridge: there is thus a smaller inner harbour, used by pleasure craft, and a larger outer harbour whose entrance is narrowed by a protective mole. The fishmarket stands on the north side of the outer harbour and here the vessels land their catches while the Folkestone—Boulogne cargo vessels berth at the South Quay.

It is the railway quay, however, which is the busiest section of the port. Here there are three berths on the sheltered eastern side with a depth of 13 to 16 ft. of water at low water spring tides and 31 to 34 ft. at high water. To handle the cargo trade the quay is equipped with six travelling cranes capable of lifts ranging from 4 to 10 tons. Each morning in summer the packet steamer leaves the Railway Quay for Boulogne and some 2½ hr. later the ship from Calais arrives at the quay, to depart again at 4.15 p.m. with a load which includes Paris-bound Golden Arrow passengers. In the evening comes the vessel returning from Boulogne. Operation of Folkestone—Calais sailings as a regular thing is postwar practice. For a period between the wars Folkestone was the British port for the steamship service from Dunkirk.

Freight Traffic

During 1955 (the latest year for which comparative statistics have been published) the value of the total overseas trade of Folkestone amounted to £11 million—more than that of Rochester, but equal to only one-fifth that of neighbouring Dover. The imports were more than twice as valuable as the exports; and, as in most cross-Channel ports, woven fabrics (of wool and rayon) and other clothing formed the most important single group of commodities, accounting for nearly half the total. Other leading imports were essential oils, perfumes and medicinal products, wine and dates. All are comparatively valuable in relation to their bulk. On the export side, the post was valued at nearly £1 million; otherwise, the most important outward cargo consisted (as is quite usual in British ports) of road vehicles, aircraft parts, and machinery.

Today a unified control allows co-operation rather than competition between Dover and Folkestone. Folkestone is content to enjoy its reputation as the largest resort in Kent, and to provide a valuable supplement to the cross-Channel services of Dover, assisting its neighbour rather than it did in the days of the Cinque Ports. Nearness to France, then a liability, is now the basis of a prosperous traffic in goods and passengers.

CHANNEL TUNNEL

International Activity

CONSIDERABLE international activity is now centring on the Channel Tunnel project. The Channel Tunnel Study Group, the British section of which comprises Messrs. Leo d'Erlanger, A. B. B. Valentine and E. G. Whitaker, has decided that the survey of its potentialities can be accelerated by making a physical study of the site concurrently with the economic studies, so that informed opinion on the feasibility of the scheme should be available by the end of 1959. A survey is due to begin in June at Sangatte, between Calais and Boulogne, where French tunnelling began in the eighties. This has been chosen in preference to the British works at Shakespeare Cliff near Dover because the geological structure is more complex. The geophysical consultant is Professor J. M. Bruckshaw, of the Royal School of Mines; a British, a French and an American firm will participate in the survey.

Economic research and a review of engineering data are being undertaken by a British, a French and an American economic organisation. The Channel Tunnel Study Group represents the British and French Channel Tunnel companies, the Suez Canal Company, the Paris Office of the International Road Federation, and American interests represented through Technical Studies, Incorporated.

LETTER TO THE EDITOR

The Declining Curve

SIR,—It has clearly never occurred to bus operators that their dismal failure properly to connect with trains has driven the public into finding alternative means of transport.—Yours faithfully,

G. H. S. BEHREND.

The White House,
Rozel Harbour, Jersey, C.I.

Service Cuts on South Coast

SIR,—Your report, in your issue of May 24, of our recent successful application to trim certain services in the early summer period concluded with the following sentence: "A three-month experiment with reduced fares at off-peak periods, introduced for the benefit of the councils, had been a 'dismal failure,' it was stated." I should like to make it clear that the experiment referred to was made by another operator and not by Southdown.—Yours faithfully,

A. S. WOODGATE,
General Manager,
Southdown Motor Services, Limited.

Steine Street,
Brighton, 1.

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RAILWAYS IN IRELAND

A Still Extensive Network

CONSIDERABLE USE OF DIESEL TRACTION

THE main railway operations of Coras Iompair Eireann, the Irish transport company, are now undertaken by diesel traction in the shape of multiple-unit diesel train sets and passenger and freight trains hauled by diesel-electric locomotives. The work amounts to almost 75 per cent of the total train mileage which last year (1957-58) was 9,251,822. The main traffic routes naturally centre upon Dublin and the line to Cork and Cobh is the only C.I.E. main line that is double track throughout. Those attending the Institute of Transport congress who are going to Killarney on the Radio Train will traverse this route as far as Mallow, which is the junction for the line to Killarney and Tralee and also for that to Waterford via Fermoy and Dungarvan. The introduction of diesel traction was followed by a marked improvement in the Dublin—Cork train services and even the winter timetable includes two up and one down trains taking only 3 hr. on the 168-mile journey despite a stop in one case at Limerick Junction, where the working cannot be other than difficult owing to the unorthodox layout. It should be added that another down express, which also calls there, only takes five minutes longer.

Unconnected Lines

Apart from the Cork—Cobh section on which a frequent suburban train service is worked—it may or may not be coincidental that there is no parallel bus service—there is the single line east from Cobh Junction to Youghal and westward from Cork the lines of the erstwhile Cork, Bandon and South Coast Railway. The Cork terminus at Albert Quay is linked with the main station (Glanmire) by a section of railway through the streets and over two bridges. Although the number has decreased, C.I.E. has still sections which are isolated either because of break of gauge or impracticability of physical connection. In the latter category comes the line from Waterford Manor to Tramore, a quite sizeable seaside resort, where one diesel set trundles merrily up and down day in and day out and achieves something of the order of a 40-min. frequency when peak conditions call for it. The narrow-gauge sections of C.I.E. have dwindled steadily, the last

stones and its operation has latterly been simplified by the doubling of the track at Dun Laoghaire Station and just east thereof where the bottleneck was further complicated by the proximity of the branch to the mail boat pier. Most of the trains leaving Dublin by the Cork line through Kildare use Kingsbridge Station and those for the west and north-west start from Westland Row.

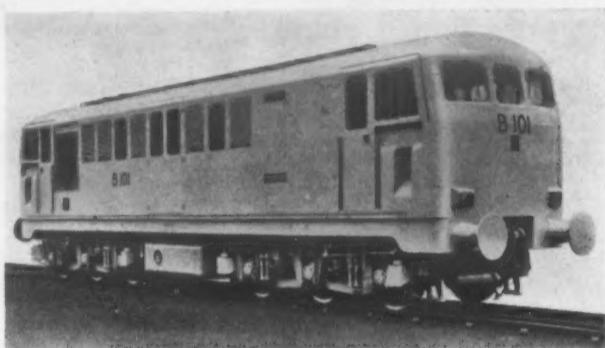
The Great Northern Railway may not be what it was, largely through no fault of its own, but it still manages to provide a very reasonable service northward from Dublin to Drogheda, Dundalk and Belfast and also a suburban service to Howth, where it still maintains the Hill of Howth electric tramway owing to the dilatoriness of the road authorities. The G.N.R. was among the pioneers of diesel railway traction and certainly of the postwar introduction of multiple-unit diesel sets. Its latest, which it built itself at the Dundalk works now operates one of the workings of the *Enterprise* nonstop train between Dublin and Belfast. This works twice each week-day in each direction. The

G.N.R. is associated with the British Transport Commission in the County Donegal Joint Committee which works 67 miles of 3-ft. gauge railway largely in the Republic of Ireland. It too was a diesel railcar pioneer and almost all its passenger mileage is normally so provided.

Great Northern Closings

The action last summer of the Northern Ireland Government in refusing to agree to the continued operation of certain unremunerative sections of the G.N.R. had indirect as well as direct results. It will be recalled that the sections concerned were from Omagh to Clones via Enniskillen, with the branch from Bundoran Junction to Bundoran, Clones to Dundalk, and Cavan to Clones and Portadown and branches therefrom. Freight services continued on the lines within the republic such as Cavan to Clones and Glaslough and Clones to Dundalk. The Sligo, Leitrim and Northern Counties Railway closed since it had already been losing money and the removal of trains from Enniskillen virtually hamstrung the smaller line.

Largely owing to the conditions under which it has had to operate the G.N.R. has not been



One of the 12 A1A-A1A diesel-electric locomotives built by the Birmingham Railway Carriage and Wagon Co., Limited, with 960-h.p. Sulzer engines and Metropolitan-Vickers electrical equipment for C.I.E.



A.C.I.E. multiple-unit diesel train, built by Park Royal with A.E.C. engines, at Portarlington and, right, one of the 60 Metropolitan-Vickers diesel-electric Co-Co locomotives with 1,200-h.p. Crossley Brothers engines and Metropolitan-Cammell mechanical parts

substantial abandonment being that of the Tralee and Dingle in the far south-west. Further round the coast the West Clare section from Ennis to Kilrush and Kilkee has, however, survived and been equipped with new diesel railcars and diesel locomotives. The steam locomotives and rolling stock were transferred where suitable to the Cavan and Leitrim section which connects at Dromod with the Dublin—Sligo main line and at Beltrbert with a branch of the Great Northern Railway. The latter connection was, of course, affected last year by the withdrawal of passenger services from much of that system.

Limerick is linked with Dublin via Nenagh and via Limerick Junction and through trains take the former route. It involves reversal at Ballybrophy, the junction on the main Dublin—Cork line, but that would also be necessary on the Limerick Junction route. Limerick has also a line to Tralee via Newcastle West and Listowel on which there are two junctions. One is at Partickswell for Rathluirc on the Cork line, a section used only for freight, and the other at Ballingrane for the branch to Foynes, perhaps best known in Britain as the erstwhile flying-boat port-of-call, but also a small oil port. North from Limerick runs the line to Ennis, Athlone (on the Dublin—Galway main line), Tuam, Claremorris and Sligo which offers a number of cross-country connections.

West and North-West

To the west and north-west of Dublin most of the trains share the same route as far as Mullingar, the junction for the Longford and Sligo line, but trains for Athlone and stations beyond on the lines to Galway, or Claremorris and Westport have an alternative route from Dublin which uses the Cork line as far as Portarlington and continues via Tullamore to Athlone. Both the Portlaoighise and Carlow routes to Kilkenny and Waterford also use the Cork line, the one leaving it at Portlaoighise and the others at Kildare. Waterford trains proceeding via Carlow require to reverse at Kilkenny. Waterford itself is a considerable railway centre with not only the lines from Kilkenny and Mallow, but also those via New Ross to Macmine Junction on the Dublin—Wexford line and to Rosslare and Wexford.

In a general, and by no means complete survey, of the C.I.E. system reference must also be made to the old Dublin and South Eastern routes from Westland Row and Harcourt Street stations in Dublin to Bray, Greystones and Wexford en route to Rosslare. There is a substantial suburban service from Dublin which works as far as Greystones and its operation has latterly been simplified by the doubling of the track at Dun Laoghaire Station and just east thereof where the bottleneck was further complicated by the proximity of the branch to the mail boat pier. Most of the trains leaving Dublin by the Cork line through Kildare use Kingsbridge Station and those for the west and north-west start from Westland Row.

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Extent of Diesel Operation

Much of the railway operation in Ireland, therefore, is diesel-powered and, for that matter, virtually the entire road passenger fleets of C.I.E. (675 double-deck and 475 single-deck vehicles) and the G.N.R. (36 double-deckers and 127 single-deckers) are diesel-engined. Reference to buses brings in the last of the old Irish railway companies, the Londonderry and Lough Swilly, which with 46 passenger vehicles—seven of them double-deck—and 64 lorries has replaced all its railway services and covers much other territory besides. The County Donegal bus services are worked for it by the G.N.R. under a special agreement and include certain railway replacement routes such as that from Stranorlar to Glenties.

The Beddy committee in its report last year on internal transport in Ireland held that there had not been as much co-ordination as there could have been between rail and road services. The remark seemed to have more in mind the matter of freight traffic since all the railway undertakings have taken some trouble to arrange connections between bus and train. With roundly five dozen luxury coaches in its fleet C.I.E. has developed some extremely popular extended tours and both it and the G.N.R. provide day tours from a number of centres. Both are engaged in the hotel business, the former with establishments at Galway, Kenmare, Killarney, Mulranny, Parknasilla and Sligo, and the latter at Bundoran in the republic and Rostrevor in Northern Ireland. In railway catering it has been found that, as in Britain, the tendency is for passengers to prefer the lighter types of meal, and buffet cars are, of course, particularly suited to multiple-unit diesel trains.

ROUTES TO IRELAND

LIVERPOOL—BELFAST

GLASGOW—BELFAST

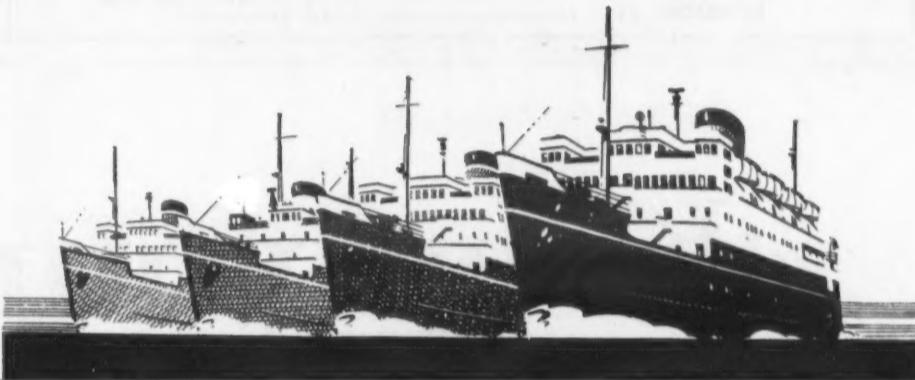
LIVERPOOL—DUBLIN

GLASGOW—DUBLIN

FISHGUARD—CORK

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One of the 94 diesel-electric locomotives supplied by Metrovick to Coras Iompair Eireann. These will serve all lines, and the order is the largest of its kind placed in Britain. Sub-contractors for mechanical parts: Metropolitan-Cammell. Diesel engines by Crossley Bros. Ltd.

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A new type of diesel railcar stock is now in operation by Ulster Transport Authority running between Belfast and Londonderry. The versatility of this diesel railcar enables it to work express passenger trains, slower passenger or mixed passenger freight trains, also freight trains by using the power car as a locomotive.

The power unit and transmission were developed in co-operation with Ulster Transport Authority, British United Traction, Ltd., Leyland Motors, Ltd., and Self-Changing Gears, Ltd. Write for further details of this interesting new Railcar Stock, including the transmission fitted therein.



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B.M.C. RESTYLES ITS
SEVEN-TON RANGE

Improved Visibility and Comfort in New Cab

DESIGNATED Model 702 and available through both Austin and Morris sign-holders, a redesigned 7-ton commercial vehicle range that supersedes the current 7-tonner has been announced this week by the British Motor Corporation, Limited. The principal distinguishing feature of the B.M.C. 702 is a new cab of most modern appearance produced by

Wilenhall Motor Radiator Co., Limited, which provides a high standard of comfort and convenience and excellent visibility through a large-area one-piece wrap-round windscreen. There have been reductions in all prices, which range from £1,162 (plus £246 11s. 8d. purchase tax in Britain) for a 10-ft. wheelbase chassis-cab to £1,306 (plus £247 6s. 8d. purchase tax) for a 13 ft. 4 in. wheelbase complete dropside lorry.

As in the earlier range, power is provided by the B.M.C. 5.1-litre direct-injection diesel engine rated at 105 b.h.p. at 2,600 r.p.m., driving through a 12-in. dia. single dryplate clutch, four-speed constant-mesh gearbox, two-piece open tubular propeller shaft and spiral bevel rear axle with fully floating half shafts and a standard ratio of 7.2 to 1. An Eaton 16500-series two-speed axle is available optionally for export markets.

A standard fitment in the earlier B.M.C.

7-tonner, a power steering servo, is not fitted to the 702. Instead, the Cam Gears Type EQ high-efficiency gear with a ratio of 23 to 1 is standard equipment, with the Hydrosteer hydraulic steering servo available as an extra. The frame is of heavy-gauge pressed-steel channel sections with a maximum depth of 9½ in., with three available wheelbases of 10 ft., 12 ft. 6 in. and 13 ft. 4 in. and an optional 14-in. frame extension available for the longest wheelbase. Semi-elliptic springs are used all round for suspension and hydraulic dampers are offered at extra cost. For operation at the normal recommended gross weight of 10 tons 5 cwt., 8.25-20 12-ply tyres are fitted, while 9.00-20 12-ply tyres are available at extra cost for operation at a gross weight of 11 tons. A mechanical tyre pump is offered as an extra.

Two-leading-shoe brakes 16 in. in diameter at the front and 15½ in. in diameter at the rear are hydraulically operated and vacuum-servo assisted and shoes are provided with individual adjusters. Total brake-lining area of 480 sq. in. provides a specific area of nearly 47 sq. in. at the normal maximum gross weight. Full 12-volt electrical equipment includes dual windscreen wipers and steering-column headlight-dip and horn switches, while flashing direction indicators and a coolant-temperature gauge, standard on export vehicles, are available as extras on home-market vehicles. Built-in heater-demister and radiator are also offered as factory-fitted extras.

New Cab

The new forward-control cab is of all-steel welded construction, with toughened-glass wrap-round windscreen, friction-controlled swivelling quarter lights and full-drop balanced windows in the doors and two windows in the back of the cab. The cab roof and back panel to waist level are lined internally with composition board and the floor is covered with a rubber mat. Doors are hung on concealed hinges from the front pillars and the interior door casings are trimmed with p.v.c.-coated cloth. Press-button-operated door catches are lockable and the cab is sealed against dust and draughts. Both seats have foam rubber cushions and rubberised hair squabs trimmed with p.v.c.-coated fabric, the passenger's seat being fixed over a tool locker and the driver's adjustable both for height and fore and aft. The instruments are grouped in a central cowled panel, which has provision for the radio speaker when required, flanked by lockers recessed into the scuttle lining panels on each side.

The engine cowling is designed to promote good air flow across the top of the engine. Both side panels are quickly removable and the left-hand side one is asbestos-lined for protection against manifold heat. There is a hinged trap in the top of the cowling for access to the oil filter. The front wings are reinforced to carry a step at their rear ends for cab access and steps for the front wheels are available as an optional extra.

The long-wheelbase chassis fitted with a standard 17 ft. 9 in. long body (maximum legal body length is 18 ft. 4 in.) has an overall length of 23 ft. 10½ in. and an overall width of 7 ft. 5½ in. The turning circle is 54 ft. 6 in. and the laden ground clearance 8½ in. Estimated licensing weights for the chassis and cab are 2 tons 18 cwt. for the 13 ft. 4 in. w.b., 2 tons 17½ cwt. for the 12 ft. 6 in. w.b. and 2 tons 17 cwt. for the 10 ft. 6 in. w.b. versions. Standard dropside bodies weigh 11 cwt. 17 ft. 9 in. long and 10 cwt. 16 ft. 6 in. long. With standard tyres and axle ratio, speeds in the various gears at 1,000 r.p.m. engine speed are first 2.48 m.p.h., second 4.32 m.p.h., third 8.6 m.p.h. and top 15 m.p.h., giving a brochure top speed at governed engine revolutions of 39 m.p.h.

PILGRIMS TO LOURDES

(Continued from page 7)
peak periods and an extension is being constructed. This could not, however, be ready for the summer traffic and it was decided that a temporary building should be put up to the west of the main building. This is of wooden construction and measures 100 ft. long by 50 ft. wide. On the landward side there is a foyer 40 ft. long by 20 ft. wide separated from the rest of the building by a partially glazed partition. Apart from an office for customs men, the rest of the building is divided by metal barriers into two main areas which serve as both customs hall and departure or arrival lounges. There are three check-in desks in the foyer from which passengers go into one or the other of the main areas. The new building, which cost £11,000, is known as the Lourdes Terminal and is used only for passengers to or via Lourdes.

The nature of pilgrimages to Lourdes makes it inevitable that the problem of carrying invalids must be faced and various interior arrangements have been worked out for the Viscount 707s and 808s when operating on scheduled services and also when flying charter. In the former case the 707 can take one or two stretchers in the forward compartment while the 808 may carry two stretchers if four seats are removed from the forward compartment. Each type has two invalid stretcher versions for charter operations: the 707 with 14 stretchers and 35 seats or 11 stretchers and 39 seats and the 808 with 15 stretchers and 34 seats or 12 stretchers and 40 seats. It is expected that between May and the end of October there will be in all 82 stretcher flights—all but 12 by Viscounts—and 34 normal charter flights carrying invalids.

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SOCIAL AND PERSONAL

Southern Region Retirement

MR. T. E. CHRIMES, M.I.Mech.E., M.Inst.Loco.E., M.Inst.T., motive power superintendent, Southern Region, British Railways, retires on May 31. He joined the former L.B.S.C.R. as a pupil of Mr. D. Earle Marsh in 1910.

* * *
Mr. A. E. Woolley, an inspector in the machine shop of Guy Motors, Limited, has been elected mayor of Birstall, Staffs.

* * *
At its last meeting the board of the Railway Benevolent Institution granted annuities to 19 widows and 13 members involving an additional liability of £605 10s. per annum; 91 gratuities were also granted amounting to £867 10s. to meet cases of immediate necessity.

* * *
Mr. F. J. Speight, M.Inst.T., who has been elected chairman of the national council of the P.V.O.A. for the ensuing year, was one of the founder members of the Association, when with other organisations in 1945 it was formed under the banner of the National Road Transport Federation. He is a director and secretary of the



Mr. F. J. Speight

group of companies controlled by George Ewer and Co., Limited, London, which now operate a fleet of 200 coaches to all principal towns in the South, East and West of England. He joined George Ewer in 1925. Mr. Speight has played an active role in the affairs of the P.V.O.A. and was its first chairman, holding office for three years. He was chairman of the National Road Transport Federation in 1952-54.

* * *
Mr. F. A. Dodge has been made regional accountant (designate), North Eastern Region, B.R., arising out of the decision to terminate the bi-regional (Eastern-North Eastern) arrangements for the regional accountant's department and to establish separate organisations in each region. As the revised organisation develops, Mr. Dodge will assume responsibility for the North Eastern Region. Coming from a family with a long tradition of service with the Great Western Railway, he joined that company in 1924 as a clerk at Paddington. After experience both at Paddington and Swindon, he was engaged on special work in connection with the Government control agreement throughout the war years and



Mr. F. A. Dodge

in 1946 he became chief auditor at Swindon. In 1949 he returned to Paddington and became senior assistant to chief accountant in 1951. In 1952 Mr. Dodge was appointed assistant accountant, Western Region, Paddington, and in December, 1954, moved to British Transport Commission headquarters as assistant director of accounts, finance department, being redesignated assistant railway accountant in that department in 1956. He was a member of the team led by Sir Robert Inglis which was sent to Rhodesia in 1955 to investigate and report on Rhodesia Railways. He is chairman of the railway statistics committee.

* * *
The British Transport Commission announces the appointment of Mr. A. C. West, O.B.E., Chief Constable of Portsmouth, to be Chief Constable, British Transport Police. Mr. West will take up his appointment on July 7.

* * *
The London Midland Region announces the following appointments:

Mr. G. Mitchellhill to be traffic assistant to divisional traffic manager, Nottingham.

Mr. L. W. Williams to be assistant district goods manager (sales), Manchester.

Mr. G. Phillips Smith to be assistant to Irish traffic superintendent (night services), Euston.

Mr. M. R. C. Hughes to be assistant district operating superintendent, London (M), located Marylebone.

Mr. T. F. Clayton to be assistant district motive power superintendent, Newton Heath.

* * *
It was announced last week that the Minister of Transport has reappointed General Sir Brian Robertson chairman of the British Transport Commission for a further term of five years. He has been chairman since September, 1953, and his present term was due to expire on September 14 this year. Sir Philip Warter has been appointed a part-time member of the Commission in succession to Mr. F. A. Pope, who retired on April 30.

Decimal Investigation

A STUDY group has been set up by the British Association for the Advancement of Science under the chairmanship of Sir Hugh Beaver, to investigate the full consequences of a change-over to the metric system, or "the decimalisation of weights, measures and coinage of the United Kingdom." A full report is expected in 18 months and interim reports at quarterly intervals. The committee includes:

Dr. A. H. Hughes (deputy chairman and assistant managing director, Arthur Guinness Son and Company), Dr. H. Beeching (director of Imperial Chemical Industries), Mr. M. G. Bennett (general treasurer, British Association), Professor C. F. Carter (Professor of Applied Economics, Queen's University, Belfast), Mr. Hugh Conway (joint managing director, Short Brothers and Harland), Mr. A. C. Hartley (consulting engineer), Lord Simon of Wythenshawe, Mr. F. S. Walker (chairman of Lever Brothers, Port Sunlight) and Mr. C. P. Jones (Rolls-Royce).

* * *
Coburn Engineers, Limited, suppliers of sliding door gear, has appointed Mr. A. S. Davidson to act as agent for railway rolling stock equipment.

* * *
Mr. L. H. Joslin, hitherto chief clerk, line traffic manager's office, Great Eastern Line, has been appointed assistant to commercial officer (mineral), Eastern Region, B.R. Mr. Joslin joined the former L.N.E.R. at Gorleston-on-Sea in 1924.

* * *
Mr. D. W. Morison, at present traffic manager and assistant general manager, Hants and Dorset Motor Services, Limited, has been appointed general manager in succession to Mr. G. H. Naphine, whose forthcoming retirement has already been announced.

* * *
Mr. J. A. Hislop, A.C.A., chief accountant of the Atlantic Steam Navigation Co., Limited, and of its subsidiary Frank Bustard and Sons, Limited, since March, 1957, has been appointed secretary and chief accountant to both companies. He succeeds the late Mr. S. B. Morrish.

* * *
Mr. W. Jeffers, chief docks manager, South Wales Docks, B.T.C., has been elected a member of council of the Industrial Association of Wales and Monmouthshire and Mr. H. H. Swift, formerly South Wales area officer, Western Region, B.R., and now a director of John Morgan (Builders), Limited, Cardiff, has become a member of executive committees. Mr. D. J. Young, Steel Company of Wales, Limited, is re-elected vice-chairman of the South Wales executive committee.

* * *
Following the visit made by Mr. R. Antony Beckett, managing director of Beckett, Laycock and Watkinson, Limited, in January and February last to Australia and New Zealand, it is announced that the company has now formed a wholly owned subsidiary in Australia called Beclawat (Australia), Pty., Limited, incorporated in the state of Victoria. An existing engineering company with works in Melbourne has been acquired.

* * *
Mr. Leslie M. Sayers has been appointed to the position of assistant general manager (administration) in the North Eastern Region of British Railways. This is a new post in the revised regional organisation. Mr. Sayers commenced his railway career in 1927 as clerk at Belper with the L.M.S.R. He was appointed stationmaster at Lancaster Castle in 1940 and subsequently filled number of posts in the operating department at Crewe, Watford, Derby and Peterborough, before being appointed assistant district operating manager, Leicester, in 1946. In 1948 he became



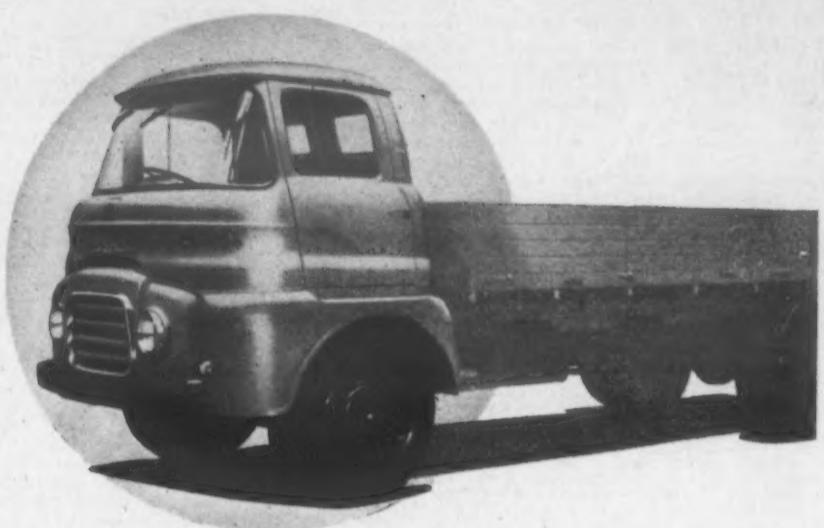
Mr. L. M. Sayers

operating assistant to the secretary and manager of the Cheshire Lines at Liverpool and seven months later was appointed district operating superintendent, Liverpool, Cheshire Lines. He was transferred to a similar post at Hull in 1950 and in 1951 returned to the London Midland Region as district operating superintendent, Nottingham. In August, 1954, he became divisional operating superintendent at Crewe, and in January, 1957, was appointed assistant general manager, London Midland Region, the post he now vacates.

* * *
Mr. E. J. Waddington, A.C.A., has resigned from the boards of Vickers-Armstrongs (Aircraft), Limited, Vickers-Armstrongs (Engineers), Limited, Vickers-Armstrongs (Shipbuilders), Limited, and Vickers-Armstrongs (Tractors), Limited, as from May 15, and Mr. J. H. Robbie, C.A., a director of Vickers-Armstrongs (Engineers), Limited, has been appointed an additional member of the board of directors of Vickers-Armstrong (Aircraft), Limited, Vickers-Armstrong (Shipbuilders), Limited, and Vickers-Armstrong (Tractors), Limited.

* * *
Mr. A. G. Boardman, traffic superintendent, Birmingham Parcels branch, has been appointed branch manager of B.R.S. (Parcels), Limited, in succession to Mr. E. J. Coxhead, retiring. Mr. Boardman joined Pickfords, Limited, in 1930, and became depot superintendent of the Walter Street (Birmingham) depot in 1939. In 1950 he was appointed traffic superintendent of this branch. Mr. Coxhead joined Chaplins, Limited, in 1907 at Ventnor. In 1937, after the acquisition of Chaplins by Pickfords, he was appointed depot manager at various places and in 1946, following the formation of the Carter Paterson and Pickfords Joint Parcels Service, he was appointed Midland area manager. He was appointed branch manager of the Birmingham Parcels branch in 1950.

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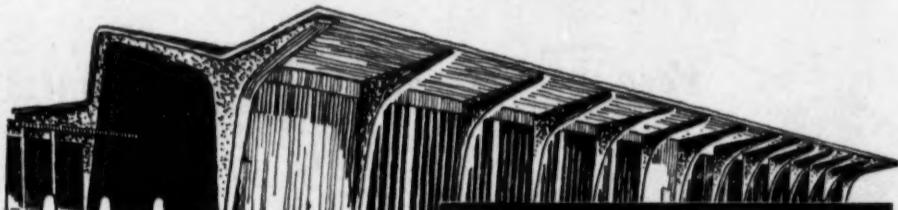
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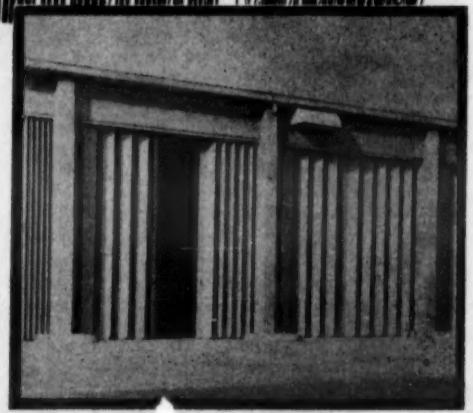


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IMPORTANT CONTRACTS

C.P.A. Re-equipment

IN Vancouver last week, Mr. G. W. Grant McConachie, president of Canadian Pacific Airlines, said that under a £20,000,000 expansion and re-equipment plan now being studied by the company, there was a good chance that large orders would go to British manufacturers. These would comprise the purchase of five Bristol Britannias (delivery is now taking place of an initial order for six Britannias) and of 10 de Havilland Comets. C.P.A. has an option on the five Britannias and a decision will be made in the autumn. A decision on the jet aircraft, of which a total of 25 was required, would be made in about a year's time, when the various types available would have proved themselves in operation.

More B.U.T. Equipment for British Railways Further orders valued at over £1,000,000 for British Railways have been placed with British United Traction, Limited. They call for diesel engines, transmission units and drivers' controls for incorporation in a total of 231 twin-engined power cars which are to be built by British Railways, Cravens, Limited, and the Metropolitan-Cammell-Carriage and Wagon Co., Limited, under the 1959 production programme. These latest orders bring the number of B.U.T. twin-engined power cars, either delivered or to be delivered to British Railways, to nearly 1,700.

Western Region Contracts The Western Region of British Railways announces the following contracts:

The North Acton Conveyor and Elevator Co., Limited, Acton, W.3, for one electrically driven slat conveyor at goods shed, Merthyr, Plymouth Street.

Wakefield-Dick Industrial Oils, Limited, London, W.1, for supply and installation of plant for the bulk storage and dispensing of lubricating oil and anti-freeze mixture at diesel oil fuelling and dispensing depot, Tysley.

British Insulated Callender's Construction Co., Limited, London, W.C.2, for installation of cable and the recovery of the existing overhead pole route between Chepstow and Caldicot Junction, and for cable installation between Slough and Reading.

Turiff Construction Corporation, Limited, Warwick, for completion of constructional works for new loops and junctions at Fenny Compton.

Nassau Harbour Improvements

A contract for a 550-ft. extension to the main wharf, and other improvement work on the harbour at Nassau in the Bahamas, has been awarded to Sir Robert McAlpine and Sons (Bahamas), Limited. The work is expected to start in July and will increase the length of the Prince George Wharf to 1,150 ft., enabling it to take several cruise or cargo ships at one time and reduce demurrage which now occurs when vessels have to anchor off Nassau Bar awaiting dock space. Dredging will also be carried out to deepen the harbour and widen the inner end of the approach. After dredging, there will be 27 ft. of water on both sides of the extended wharf.

British Petroleum Purchases in the U.K.

During 1957, B.P. Trading, Limited, placed orders for materials, equipment and services to the value of £19,500,000. Of this total, orders worth £18,800,000 were placed in the United Kingdom, approximately 44 per cent of this amount being for export. In addition, refineries and other main subsidiaries of B.P. in the United Kingdom placed during the year orders valued at about £3,000,000 to cover their local requirements. Orders valued at £500 and over were divided among approximately 600 suppliers in the United Kingdom. Shipments of materials to overseas destinations by sea and air covered some 20,000 consignments amounting to just under 100,000 tons, at a freight cost of £1,000,000. In addition, B.P.'s shipping organisation, B.P. Tanker Company, last year purchased in the United Kingdom provisions and materials to the value of £2,700,000. Another £600,000 was spent in purchases at foreign ports.

Ingatestone and Western Avenue Road Contracts

The Minister of Transport and Civil Aviation has authorised the Essex County Council to accept the tender of £248,463 submitted by W. and C. French, Limited, for the construction of a by-pass at Ingatestone, the Essex village on the London-Great Yarmouth road (A12) between Brentwood and Chelmsford. The work is expected to start shortly. The new road, two miles long, will leave the existing road near Trueloves Lane and after passing under Fryerning Lane will rejoin the existing road clear of the built-up area. It will have dual 24-ft. carriageways and where the new road passes under Fryerning Lane a new reinforced concrete bridge with a span of 78 ft. will carry the lane over the by-pass. The Minister has awarded a £761,000 contract for the building of the underpass on Western Avenue at its junction with Hanger Lane (North Circular Road) to A. E. Farr, Limited. This work also will start shortly. The underpass will have twin 24-ft. carriageways with additional 24-ft. carriageways branching from both sides to form a surface connection with the North Circular Road for turning traffic. It forms part of a comprehensive scheme for the modernisation of Western Avenue.

SHIPPING and SHIPBUILDING

Cautious Step on Freights

TWELVE countries were represented at a meeting last week in London of deep sea tramp owners, convened by the International Chamber of Shipping, to discuss the desirability or practicability of international co-operation in measures to alleviate the effects of the depression in freights. They decided to appoint a representative international committee to submit for further consideration such scheme or recommendations which it felt might be likely to secure adequate support if it should subsequently be thought to be appropriate and desirable to introduce international co-operative measures. France, Germany, Greece, Holland, Italy, Japan, Scandinavia and the United Kingdom agreed to appoint representatives to the committee.

Shipyard Site for India

THE British shipyard mission which visited India last year has listed five possible sites for the construction of India's second shipyard, but has recommended Cochin on the south-west coast as the most suitable, it is stated in New Delhi.

K.P.M. Ships for Sale

SEVERAL inquiries, but none from Indonesia, have already been received for 18 ships of the K.P.M. (Royal Dutch Steam Packet Company) Indonesian fleet which are up for sale. K.P.M., which formerly carried the bulk of the Indonesian coastal trade, was expelled from Indonesia during the recent political campaign. There are 45 K.P.M. ships now lying idle in Singapore. The older ones are to be disposed of.

Dock Labour Board Report

At the end of 1957 the National Dock Labour Board was awaiting discussions with officials of the Ministry of Labour and representatives of the port industry on minor amendments to the dock labour scheme proposed by the Minister following the Devlin report. The 11th annual report of the Board, which contains this paragraph, observes that the disciplinary clauses in the scheme are the subject of proposed amendments. On labour matters, the report says that reductions in the register in 1956 did not match the fall in employment, which overall in 1957 was 2 per cent, and in the second half of the year the registers were reviewed at regular monthly intervals. In the course of the year the sanctioned strength was reduced from 78,538 to 76,500; the actual labour force was reduced from 75,993 to 74,471.

Canadian Shipping on St. Lawrence

No major change in law is proposed by a Canadian federal Royal Commission to give Canadian ships an advantage over competitors when the St. Lawrence Seaway opens next spring. The Commission recommended basically that Canada's existing coastal trading laws be maintained as they are. But it did suggest—though not recommend—that the Canadian shipbuilding industry might be assisted by a federal subsidy if seaway traffic from abroad worsens its position.

Under existing legislation, the Canadian coasting trade is open to vessels on the registries of all Commonwealth nations on the same terms as vessels of Canadian registry. Non-Commonwealth ships can enter on certain specified terms on occasion. In analysing its reasons for not tightening the laws, the Commission said that the most common employment in the coasting trade of United Kingdom and other Commonwealth registries now was by Canadian operators. This was largely on the Atlantic seaboard and on the St. Lawrence River up to Montreal. It added, "It would appear reasonable to expect that future employment of United Kingdom vessels will continue to be largely by Canadian ship operators." Any continued exclusion of foreign vessels from inland waters would materially lessen the advantages of the seaway.

TENDERS INVITED

THE following items are extracted from the Board of Trade Special Register Service of Information. Inquiries should be addressed, quoting reference number where given, to the Export Services Branch, Board of Trade, Lacon House, Theobalds Road, London, W.C.1.

June 7—**Sudan.**—Sudan Railways for 15 standard WAGON UNDERFRAMES. Tenders to the Office of Controller of Stores, Atbara. (Contract No. 1731.)

June 8—**Iran.**—Iranian State Railways for 50,000 tons of RAILS and 1,700 tons of ACCESSORIES. Tender documents from the Iranian State Railways Administration, Tehran, price Rials 1,000. (ESB/8661/58.)

June 10—**Ceylon.**—Ministry of Lands and Land Development for 12 WATER TANK FRAMES, capacity not specified. Tenders to the Chairman, Tender Board, Ministry of Lands and Land Development, P.O. Box 900, Colombo, 1. (ESB/11918/58.)

June 16—**Thailand.**—State Railway of Thailand for 60 STEEL UNDERFRAMES for bogie tank wagons for metre gauge, complete with couplings and draft gear. Photocopies of tender documents from Export Services Branch, B.O.T., price 22s. (ESB/8222/58.)



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